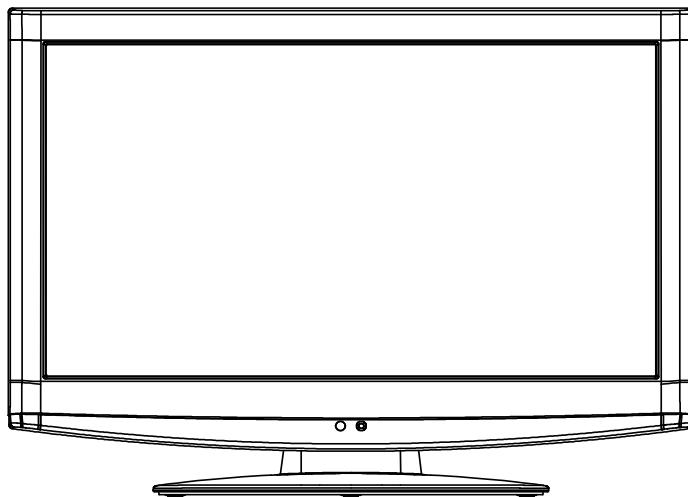


SANYO
DP19640

SANYO Factory Code N8ZFE
Service Reference NO. 610

SERVICE MANUAL

18.5" HDTV LCD TVHD ACL



**ORIGINAL
MFR'S VERSION A**

SERVICING NOTICES ON CHECKING

1. KEEP THE NOTICES

As for the places which need special attentions, they are indicated with the labels or seals on the cabinet, chassis and parts. Make sure to keep the indications and notices in the operation manual.

2. AVOID AN ELECTRIC SHOCK

There is a high voltage part inside. Avoid an electric shock while the electric current is flowing.

3. USE THE DESIGNATED PARTS

The parts in this equipment have the specific characters of incombustibility and withstand voltage for safety. Therefore, the part which is replaced should be used the part which has the same character.

Especially as to the important parts for safety which is indicated in the circuit diagram or the table of parts as a Δ mark, the designated parts must be used.

4. BE CAREFUL WITH THE LCD PANEL

Avoid a shock to the panel while servicing. Take enough care to deal with it.

5. PUT PARTS AND WIRES IN THE ORIGINAL POSITION AFTER ASSEMBLING OR WIRING

There are parts which use the insulation material such as a tube or tape for safety, or which are assembled in the condition that these do not contact with the printed board. The inside wiring is designed not to get closer to the pyrogenic parts and high voltage parts. Therefore, put these parts in the original positions.

6. PERFORM A SAFETY CHECK AFTER SERVICING

Confirm that the screws, parts and wiring which were removed in order to service are put in the original positions, or whether there are the portions which are deteriorated around the serviced places serviced or not. Check the insulation between the antenna terminal or external metal and the AC cord plug blades. And be sure the safety of that.

(INSULATION CHECK PROCEDURE)

1. Unplug the plug from the AC outlet.
2. Remove the antenna terminal on TV and turn on the TV.
3. Insulation resistance between the cord plug terminals and the eternal exposure metal [Note 2] should be more than 1M ohm by using the 500V insulation resistance meter [Note 1].
4. If the insulation resistance is less than 1M ohm, the inspection repair should be required.

[Note 1]

If you have not the 500V insulation resistance meter, use a Tester.

[Note 2]

External exposure metal: Antenna terminal
Headphone jack

HOW TO ORDER PARTS

Please include the following informations when you order parts. (Particularly the VERSION LETTER.)

1. MODEL NUMBER and VERSION LETTER

The MODEL NUMBER can be found on the back of each product and the VERSION LETTER can be found at the end of the SERIAL NUMBER.

2. PART NO. and DESCRIPTION

You can find it in your SERVICE MANUAL.

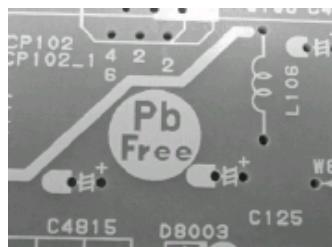
IMPORTANT

When you exchange IC and Transistor with a heat sink, apply silicon grease (YG6260M) on the contact section of the heat sink. Before applying new silicon grease, remove all the old silicon grease. (Old grease may cause damage to the IC and Transistor).

ABOUT LEAD FREE SOLDER (PbF)

Distinction of PbF PCB:

PCBs (manufactured) using lead free solder will have a PbF printing on the PCB.
(Please refer to figures.)



Caution:

- Pb free solder has a higher melting point than standard solder;
Typically the melting point is 86°F~104°F(30°C~40°C) higher.
Please use a soldering iron with temperature control and adjust it to 650°F ± 20°F (350°C ± 10°C).
In case of using high temperature soldering iron, please be careful not to heat too long.
- Pb free solder will tend to splash when heated too high (about 1100°F/ 600°C).
- All products with the printed circuit board with PbF printing must be serviced with lead free solder.
When soldering or unsoldering, completely remove all of the solder from the pins or solder area,
and be sure to heat the soldering points with the lead free solder until it melts sufficiently.

Recommendations

Recommended lead free solder composition is Sn-3.0Ag-0.5Cu.

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GENERAL SPECIFICATIONS

G-1	TV System	LCD	LCD Size / Visual Size	18.50 inch / 470.1mmV
		LCD Type	Color TFT LCD	
		Number of Pixels	1366(H) x 768(V)	
		Double Scan	No	
		View Range	Left/Right Up/Down	85/85 degree 80/80 degree
		Bright Dot	n \leq 3	
		Zero Bright Dot Ratio	70%	
		Color System	NTSC	
		Speaker	Position Size Impedance	2 Speaker Bottom 1.0 x 2.7 inch 8 ohm
		Sound Output	Max 10%(Typical)	1.5W + 1.5W ---
G-2	Tuning System	Broadcasting System	Analog	US System M
			Digital	ATSC(8VSB)/QAM
		Tuner and Receive CH	System Destination	1Tuner US (W/CABLE)
		CH Coverage		2~69, 4A, A~5~A~1, A~I, J~W, W+1~W+94
		Intermediate Digital		44.00MHz
		Frequency Analog	Picture(FP) Sound(FS) FP-FS	45.75MHz 41.25MHz 4.50MHz
		Preset CH		No
		Stereo/Dual TV Sound		US-Stereo
		Tuner Sound Muting		Yes
G-3	Signal	Video Signal	Input Level	1 V p-p/75 ohm
			Output Level	--
			S/N Ratio (Weighted)	--
			Horizontal Resolution at DVD Mode	-- --
		RGB Signal	Output Level	--
		Audio Signal	Input Level	-8.0dBm/50k ohm
			Output Level	at DVD at TV
				-- --
			Digital Output Level	0.5 V p-p/75 ohm
			S/N Ratio at DVD (Weighted)	--
			Harmonic Distortion	--
		Frequency Response :	at DVD	--
			at Video CD	--
			at SVCD	--
			at CD	--
G-4	Power	Power Source	AC	120V, 60Hz
			DC	--
		Power Consumption		29W at 120V 60Hz
				--
			Stand by (at AC)	0.3W at 120V 60Hz
			Energy Star	Yes (Ver.4.0)
			Per Year	-- kWh/Year
		Protector	Power Fuse Safety Circuit IC Protector(Micro Fuse)	Yes Yes Yes
G-5	Regulation	Safety Radiation Laser		UL(UL60065_7th)/cUL(CSA E60065_03) FCC/IC --
G-6	Temperature	Operation Storage Space Around Unit		+5°C ~ +40°C -20°C ~ +60°C 10cm (4inch)
G-7	Operating Humidity			Less than 80% RH

GENERAL SPECIFICATIONS

G-8	Clock and Timer	Clock	No				
		Sleep Timer	Max Time				
		On Timer	Program				
		Off Timer	Program				
		Game Timer	No				
G-9	Remote Control	Timer Back-up (at Power Off Mode)	more than	--	Min Sec		
		Unit	RC-RU				
		Glow in Dark Remocon	No				
		Remocon Format	SANYO				
		Format	NEC				
		Custom Code	38-C7h				
		Power Source	Voltage(D.C) UM size x pcs	3V UM-4 x 2 pcs			
		Total Keys	28 Keys				
		Keys	Power	Yes			
		1	Yes				
		2	Yes				
		3	Yes				
		4	Yes				
		5	Yes				
		6	Yes				
		7	Yes				
		8	Yes				
		9	Yes				
		0	Yes				
		-	Yes				
		Recall (Quick View)	Yes				
		Sleep	Yes				
		Mute	Yes				
		CH+ / Up	Yes				
		CH- / Down	Yes				
		VOL+ / Right	Yes				
		VOL- / Left	Yes				
		Menu	Yes				
		Reset	Yes				
		Exit	Yes				
		Enter	Yes				
		Input Select	Yes				
		CCD (Closed Caption)	Yes				
		Display	Yes				
		Zoom (Picture Size)	Yes				
		FAV +	No				
		FAV -	No				
		Audio	Yes				

GENERAL SPECIFICATIONS

G-10	Features	Auto Shut Off	Yes
		Auto Search	No
	Power On Memory	Yes	
	Hotel Mode	Yes	
	Comb Filter	Yes	
		<u>3-D</u>	
	Game Position	No	
	Auto Setup	Yes	
		Language	No
		TV Location	No
		Signal Type	Yes
		Automatic Search	Yes
	Picture Setting(TV)	Yes	
		Picture Preference	Yes
		Brightness , Contrast , Color	Yes
		Tint	Yes
		Sharpness	Yes
		Color Temperature	Yes
		DNR	Yes
		Backlight	Yes
		Yes	
	Picture Setting(PC)	Yes	
		HOR Position , VER Position	Yes
		Phase, Clock	Yes
		Red, Green, Blue	No
		Auto Adjust	Yes
	Audio	MTS	Yes
		Tone Control (Bass/Treble/Balance)	Yes
		Stable Sound	No
		Surround	Yes
		BBE	No
		SRS WOW (SRS 3D/Focus/Tru Bass)	No
		HDMI Audio	Yes
	Tuning	Speakers(Variable Audio Out)	No
		CH Program	Yes
		Air/Cable	Yes
		ADD/DELETE	Yes
	Label	CH Label	Yes
		Video Label	Yes
	Favorite CH		No
			Yes
	V-Chip	Type	<u>USA/CANADA</u> Type
		RRT Setup	Yes
	Lock	Hotel Lock	No
		Channel Lock	No
		Video Lock	No
		Panel Lock	No
	Menu Language		English
			No
	DBC (Dynamic Backlight Control)		
	Dynamic Gamma	Yes	
	Signal Meter (DTV Signal)	Yes	
	Closed Caption	Yes	
	CC Advanced	Yes	
	V-Chip Clear	Yes	
	Picture Size	Yes	
	HD Zoom	Yes	
	Film Mode	Yes	
	Aspect	No	
	PFC(Power Factor circuit)	No	
	Freeze frame	No	
	PIP/POP	No	
	Direct Input Selection	Yes	
	PC Plug and Play	No	

GENERAL SPECIFICATIONS

Digital Out	Dolby Digital	Yes
	MPEG	No
	PCM	Yes
	DTS	No
PC Monitor Input		Yes
	VGA (640x480)	Yes (60,72,75Hz)
	VGA (720x400)	Yes (70Hz)
	WVGA (848x480)	No
	SVGA (800x600)	Yes (56,60,72,75Hz)
	XGA (1024x768)	Yes (60,70,75Hz)
	WXGA (1280x768)	Yes (60Hz)
	WXGA (1280x720)	Yes (60Hz)
	WXGA (1360x768)	Yes (60Hz)
	SXGA (1280x1024)	No
HDMI Input		Yes
	VGA (640×480)	Yes (60Hz)
	720×480i (4:3)	Yes (60Hz)
	720×480i (16:9)	Yes (60Hz)
	720×480p (4:3)	Yes (60Hz)
	720×480p (16:9)	Yes (60Hz)
	720×576i (4:3)	No
	720×576i (16:9)	No
	720×576p (4:3)	No
	720×576p (16:9)	No
	1280×720p	Yes (60Hz)
	1920×1080i	Yes (60Hz)
	1920×1080p	Yes (60Hz)
	CEC (ORION Standard)	No
	Deep Color	No
	xvYCC	No
DVI to HDMI Input	VGA (640x480)	Yes (60,72,75Hz)
	VGA (720x400)	Yes (70Hz)
	WVGA (848x480)	No
	SVGA (800x600)	Yes (56,60,72,75Hz)
	XGA (1024x768)	Yes (60,70,75Hz)
	WXGA (1280x768)	Yes (60Hz)
	WXGA (1280x720)	Yes (60Hz)
	WXGA (1360x768)	Yes (60Hz)
	SXGA (1280x1024)	No
Component Input		Yes
	720×480i (4:3)	Yes (60Hz)
	720×480i (16:9)	Yes (60Hz)
	720×480p (4:3)	Yes (60Hz)
	720×480p (16:9)	Yes (60Hz)
	720×576i (4:3)	No
	720×576i (16:9)	No
	720×576p (4:3)	No
	720×576p (16:9)	No
	1280×720p	Yes (60Hz)
	1920×1080i	Yes (60Hz)
	1920×1080p	No
Wall Mount	Size W x H(mm)	Yes (100 x 100)
	Screw Size	M4 x 10
Stand	Tilt	No
	Swivel	No

GENERAL SPECIFICATIONS

G-11	Accessories	Owner's Manual	Language w/Guarantee Card	English / Spanish Yes	
		Remote Control Unit		Yes	
	Rod Antenna	Poles Terminal		No -- --	
	Loop Antenna	Terminal		No --	
	U/V Mixer			No	
	DC Car Cord (Center+)			No	
	Guarantee Card			No	
	Warning Sheet			No	
	Circuit Diagram			No	
	Antenna Change Plug			No	
	Service Facility List			No	
	Important Safeguard			No	
	Dew/AHC Caution Sheet			No	
	Quick Set-up Sheet			No	
	Battery	UM size x pcs OEM Brand		No -- --	
	AC Adapter			No	
	AC Cord (for AC Adapter)			No	
	AC Cord			Yes	
	Cable Tie			No	
	AV Cord (2Pin-1Pin)			No	
	Registration Card (NDL Card)			No	
	300 to 75ohm Antenna Adapter			No	
	Sheet Information (FCC)			No	
	Sheet Information (DTV)			No	
	Sheet Information (CEA)			No	
	Sheet Information (Return)			Yes	
	Sheet Information (Picture Quality)			Yes	
	Sheet Information (Sheet Set Up)			No	
	Sheet Information (HDMI)			No	
	Cleaning Cloth			No	
	Stand Screw			Yes(2pcs)	
	Stand			Yes	
G-12	Interface	Switch	Side	Power (Tact) Channel Up/Menu Up Channel Down/Menu Down Volume Up/Menu > Volume Down/Menu < Menu Play Eject Skip+, Search+ Skip-, Search- Still/Pause Stop Main Power SW Input Select/Enter	Yes Yes Yes Yes Yes No No No No No No Yes
			Rear	Main Power SW	No
			Indicator	Power/Stand-By	Yes (Green / Red)
				Power Wake Up	No
				On Timer	No

GENERAL SPECIFICATIONS

	Terminals	Rear	Video Input 1	RCA x 1
			Audio Input 1	RCA x 2(L/MONO, R)
			S - Input 1	No
			Video Input 2	No
			Audio Input 2	No
			S - Input 2	No
			Video Output	No
			Audio Output	No
			Component Input 1	RCA x 3
			Analog Audio	RCA x 2(L/MONO, R)
			Component Input 2	No
			Analog Audio	No
			HDMI Input 1	Yes
			Analog Audio	PC Audio Input Alternative
			HDMI Input 2	No
			Analog Audio	No
			Sub Woofer Out	No
			PC Monitor Input	Yes
			Analog Audio	Mini Pin Jack(φ 3.5), STEREO
			Digital Audio Output	Coaxial
			DC Jack (Center +)	No
			VHF/UHF Antenna Input	F Type
			Video Input 3	No
			Audio Input 3	No
			S - Input 3	No
			Other Terminal	Headphone
			AC Inlet	Yes
			USB (Software Update)	Yes
			USB (JPEG/MP3/Software Update)	No
G-13	Set Size		Approx. W x D x H (mm)	460.3 x 174.0 x 340.0
			w/o Handle, Stand Approx. W x D x H (mm)	460.3 x 60.0 x 307.8
G-14	Weight		Net (Approx.)	3.2kg (7.1lbs)
			Net w/o Handle, Stand (Approx.)	3.1kg (6.9lbs)
			Gross (Approx.)	4.3kg (9.5lbs)
			Gross w/Master Carton (Approx.)	--- kg (--- lbs)
G-15	Carton	Master Carton		No
		Content		--- Sets
		Material		--- / ---
		Dimensions W x D x H(mm)		---
		Description of Origin		---
		Gift Box	Material	Single/Full Color
			W/Color Photo Label	No
			W/Handle	No
			Dimensions W x D x H(mm)	542 x 411 x 135
			Description of Origin	No
		Drop Test		1 Corner / 3 Edges / 6 Surfaces
			Height (cm)	80
			Container Stuffing (40' container)	1989 Sets/40' container
		w/Pallet		No
		w/Wrapping		No
G-16	Material	Cabinet	Cabinet Front	PC+ABS 94V0 NON-HALOGEN
			Rear	PS 94V0 NON-DECABROM
			Stand	PS 94HB
			Jack Panel	--
		PCB	Non-Halogen Demand	No
			Eyelet Demand	Yes
G-17	Environment	Environmental standard requirement		Green procurement of SANYO
		Pb-free		Phase3(Phase3A)
			Measures for Whisker	Yes
		Rohs		Yes

DISASSEMBLY INSTRUCTIONS

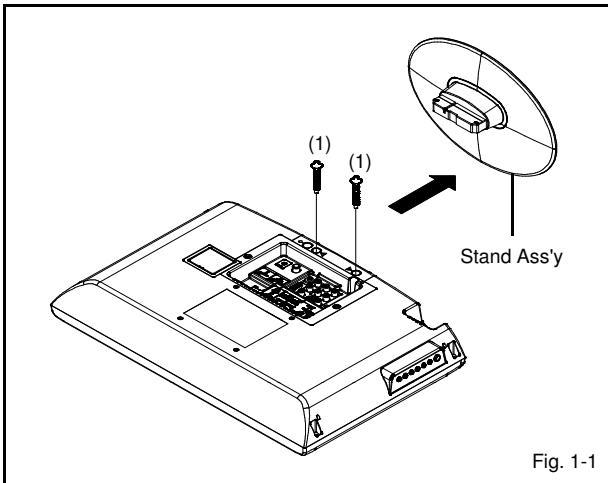
1. REMOVAL OF MECHANICAL PARTS AND P.C. BOARDS

CAUTION

Be careful not to remove the LVDS cable forcibly, because the LVDS cable may be damaged.

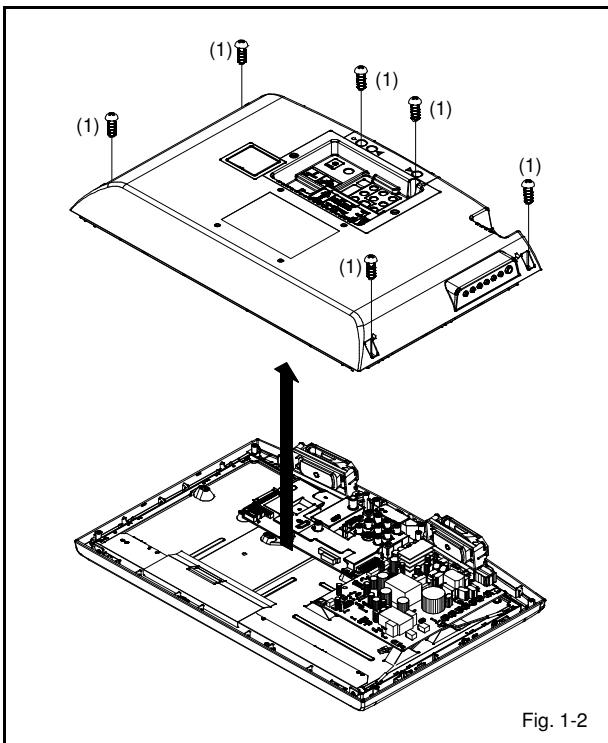
1-1: STAND ASS'Y (Refer to Fig. 1-1)

1. Remove the 2 screws (1).
2. Remove the Stand Ass'y in the direction of arrow.



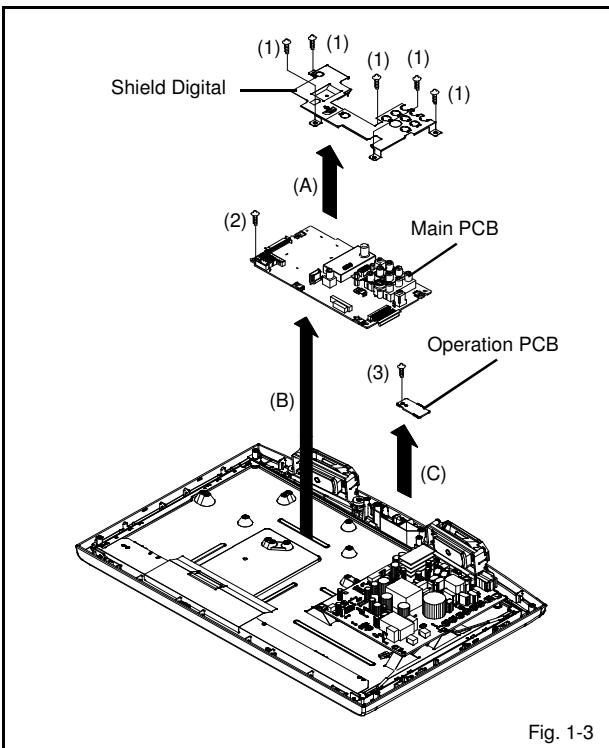
1-2: BACK CABINET ASS'Y (Refer to Fig. 1-2)

1. Remove the 6 screws (1).
2. Remove the Back Cabinet Ass'y in the direction of arrow.



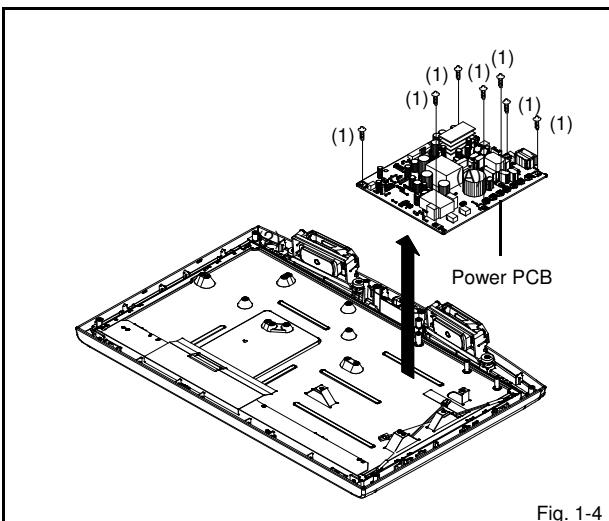
1-3: MAIN PCB and REMOCON PCB (Refer to Fig. 1-3)

1. Disconnect the following connectors:
(CP2804, CP3001, CP4301 and CP6204).
2. Remove the 5 screws (1).
3. Remove the Shield Digital in the direction of arrow (A).
4. Remove the screw (2).
5. Remove the Main PCB in the direction of arrow (B).
6. Remove the screw (3).
7. Remove the Operation PCB in the direction of arrow (C).



1-4: POWER PCB (Refer to Fig. 1-4)

1. Disconnect the following connector:
(CP7001 and CP7002).
2. Remove the 7 screws (1).
3. Remove the Power PCB in the direction of arrow.



DISASSEMBLY INSTRUCTIONS

1-5: SPEAKER ASS'Y AND LCD PANEL

(Refer to Fig. 1-6)

1. Remove the screw (1).
2. Remove the Speaker Ass'y in the direction of arrow (A).
3. Remove the LCD Panel in the direction of arrow (B).

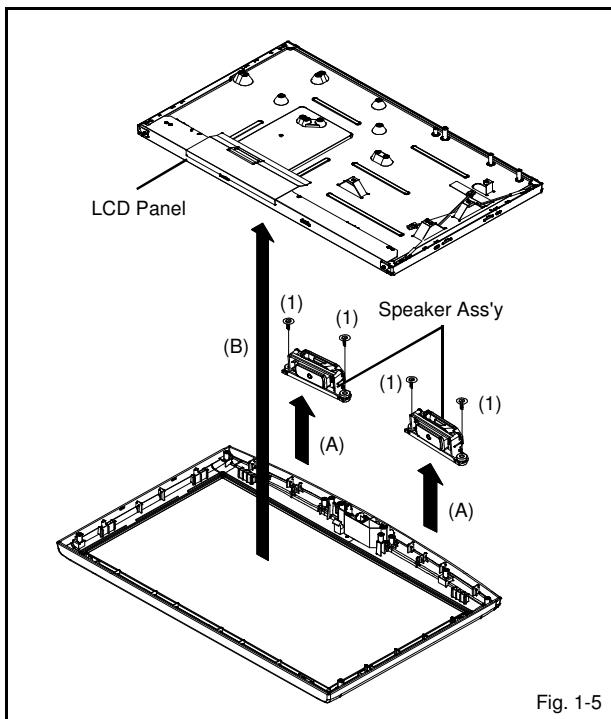


Fig. 1-5

DISASSEMBLY INSTRUCTIONS

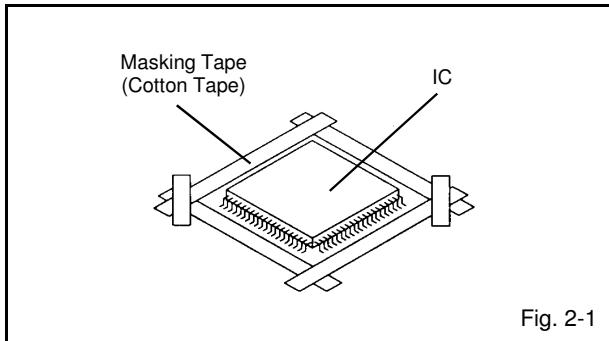
2. REMOVAL AND INSTALLATION OF FLAT PACKAGE IC

REMOVAL

1. Put Masking Tape (cotton tape) around the Flat Package IC to protect other parts from any damage. (Refer to Fig. 2-1.)

NOTE

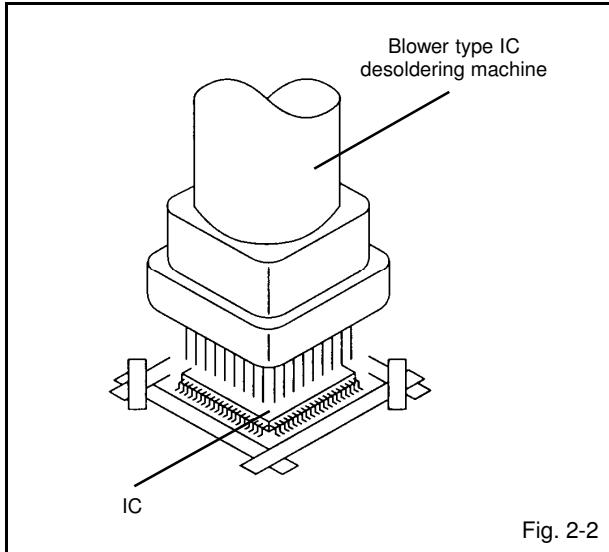
Masking is carried out on all the parts located within 10 mm distance from IC leads.



2. Heat the IC leads using a blower type IC desoldering machine. (Refer to Fig. 2-2.)

NOTE

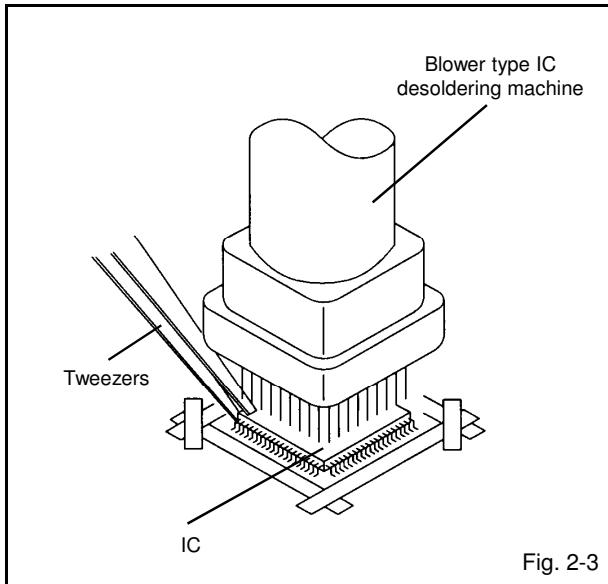
Do not rotate or move the IC back and forth , until IC can move back and forth easily after desoldering the leads completely.



3. When IC starts moving back and forth easily after desoldering completely, pickup the corner of the IC using tweezers and remove the IC by moving with the IC desoldering machine. (Refer to Fig. 2-3.)

NOTE

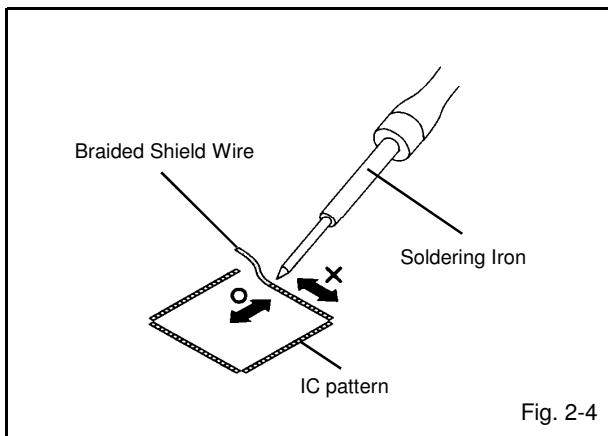
Some ICs on the PCB are affixed with glue, so be careful not to break or damage the foil of each IC leads or solder lands under the IC when removing it.



4. Peel off the Masking Tape.
5. Absorb the solder left on the pattern using the Braided Shield Wire. (Refer to Fig. 2-4.)

NOTE

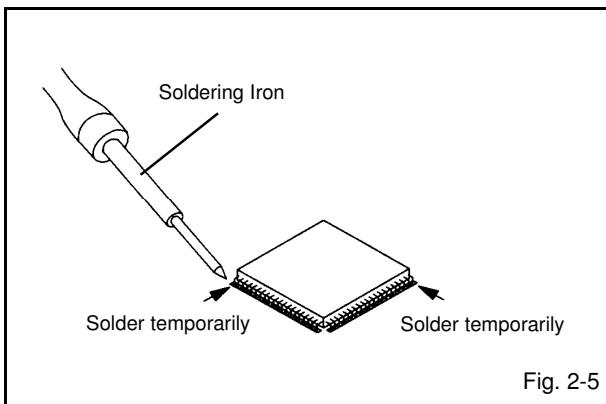
Do not move the Braided Shield Wire in the vertical direction towards the IC pattern.



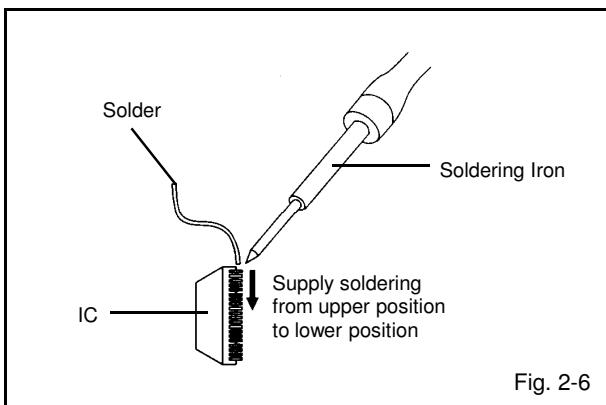
DISASSEMBLY INSTRUCTIONS

INSTALLATION

1. Take care of the polarity of new IC and then install the new IC fitting on the printed circuit pattern. Then solder each lead on the diagonal positions of IC temporarily. (Refer to Fig. 2-5.)



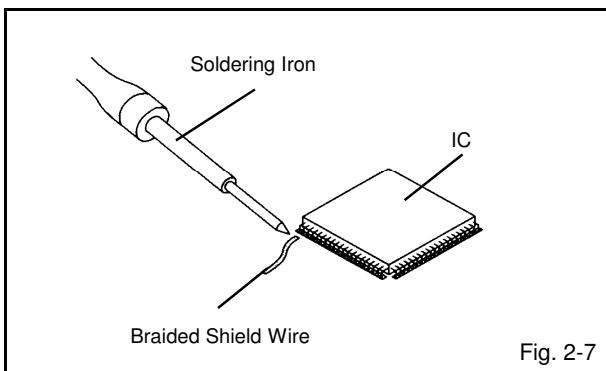
2. Supply the solder from the upper position of IC leads sliding to the lower position of the IC leads. (Refer to Fig. 2-6.)



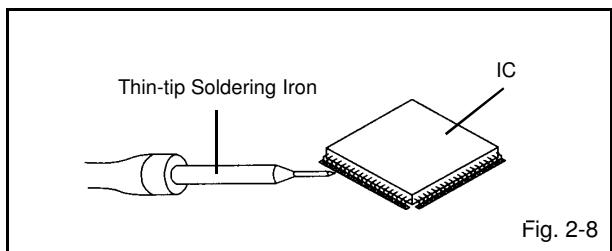
3. Absorb the solder left on the lead using the Braided Shield Wire. (Refer to Fig. 2-7.)

NOTE

Do not absorb the solder to excess.



4. When bridge-soldering between terminals and/or the soldering amount are not enough, resolder using a Thintip Soldering Iron. (Refer to Fig. 2-8.)



5. Finally, confirm the soldering status on four sides of the IC using a magnifying glass. Confirm that no abnormality is found on the soldering position and installation position of the parts around the IC. If some abnormality is found, correct by resoldering.

NOTE

When the IC leads are bent during soldering and/or repairing, do not repair the bending of leads. If the bending of leads are repaired, the pattern may be damaged. So, always be sure to replace the IC in this case.

SERVICE MODE LIST

This unit is provided with the following SERVICE MODES so you can repair, examine and adjust easily.

To enter to the SERVICE MODE function, press and hold both buttons simultaneously on the main unit and on the remote control for more than a the standard time in the appropriate condition. (See below chart.)

Set Condition	Set Key	Remocon Key	Standard Time	Operations
POWER ON	VOL. DOWN (Minimum)	0	2 sec.	Releasing of V-CHIP PASSWORD.
POWER ON	VOL. DOWN (Minimum)	1	2 sec.	Initialization of factory TV data. NOTE: If you set factory initialization, the memories are reset such as the channel setting, and the POWER ON total hours.
POWER ON	VOL. DOWN (Minimum)	6	2 sec.	POWER ON total hours are displayed on the screen. Can be checked of the INITIAL DATA of MEMORY IC. Refer to the "WHEN REPLACING EEPROM (MEMORY) IC".
POWER ON	VOL. DOWN (Minimum)	8	2 sec.	Check of the SUM DATA and MICON VERSION on the screen. Refer to the "WHEN REPLACING EEPROM (MEMORY) IC".
POWER ON	VOL. DOWN (Minimum)	9	2 sec.	Display of the Adjustment MENU on the screen. Refer to the "ELECTRICAL ADJUSTMENT" (On-Screen Display Adjustment).
POWER ON	VOL. DOWN (Minimum)	MENU	2 sec.	Releasing of HOTEL MODE FUNCTION Refer to the "HOTEL MODE FUNCTION".

WHEN REPLACING EEPROM (MEMORY) IC

CONFIRMATION OF CHECK SUM, POWER ON TOTAL HOURS AND MICON VERSION

Initial total of MEMORY IC, POWER ON total hours and MICON VERSION can be checked on the screen. Total hours are displayed in 16 system of notation.

NOTE: If you set a factory initialization, the total hours is reset to "0".

Please refer to "CONFIRMATION OF INITIAL DATA" when SUM DATA is not corresponding.

1. Turn on the POWER, and set to the ALL mode.
2. Set the VOLUME to minimum.
3. Press both VOL. DOWN button on the set and Channel button (8) on the remote control for more than 2 seconds.
4. After the confirmation of each check sum, turn off the power.

NOTE: The each item value might be different according to each set.

CHECK SUM : 5A3B	Initial setting data check sum.
LCD PWR ON : 0000	POWER ON total hours. = (16 x 16 x 16 x thousands digit value) + (16 x 16 x hundreds digit value) + (16 x tens digit value) + (ones digit value)
HDMI data check sum.	HDMI SUM : 9F00
Main Micon check Version.	DTV : CA4DI06301
EEPROM check Version.	EEPROM : K3CL10UM00
Parameter check Picture Quality.	QUALITY : @@@.@@ (@@@@ @@:@@:@@)
Parameter check Picture Size.	SCALING : @@@.@@ (@@@@ @@:@@:@@)

FIG. 1

CONFIRMATION OF INITIAL DATA

If a service repair is undertaken where it has been required to change the MEMORY IC, the following steps should be taken to ensure correct data settings while making reference to INITIAL SETTING TABLE (Attached "INITIAL DATA").

1. Turn on the POWER, and set to the ALL mode.
2. Set the VOLUME to minimum.
3. Press both VOL. DOWN button on the set and Channel button (6) on the remote control for more than 2 seconds.
ADDRESS and DATA should appear as FIG 2.

NOTE: No need to set data other position than 0200~0F79.

ADDRESS	DATA
INIT : 0001	00C6
DTV : CA4DI06301	
EEPROM : K3CL10UM00	

FIG. 2

4. ADDRESS is now selected and should "blink". Using the UP/DOWN button on the remote, step through the ADDRESS until required ADDRESS to be changed is reached.
5. Press VOL.UP/DOWN button to select DATA. When DATA is selected, it will "blink".
6. Again, step through the DATA using UP/DOWN button until required DATA value has been selected.
7. Pressing VOL.UP/DOWN button will take you back to ADDRESS for further selection if necessary.
8. Repeat steps 4 to 6 until all data has been checked.
9. When satisfied correct DATA has been entered, turn POWER off (return to STANDBY MODE) to finish DATA input.

After the data input, set to the initializing of shipping.

10. Turn on the Power.
 11. Set the VOLUME to minimum.
 12. Press both VOL. DOWN button on the set and Channel button (1) on the remote control for more than 2 seconds.
 13. After the finishing of the initializing of shipping, the unit will turn off automatically.
- The unit will now have the correct DATA for the new MEMORY IC.

ELECTRICAL ADJUSTMENTS

1. ADJUSTMENT PROCEDURE

Read and perform these adjustments when repairing the circuits or replacing electrical parts or PCB assemblies.

CAUTION

- Use an isolation transformer when performing any service on this chassis.
- When removing a PCB or related component, after unfastening or changing a wire, be sure to put the wire back in its original position.
- When you exchange IC and Transistor with a heat sink, apply silicon grease (**YG6260M**) on the contact section of the heat sink. Before applying new silicon grease, remove all the old silicon grease. (Old grease may cause damages to the IC and Transistor).

Prepare the following measurement tools for electrical adjustments.

1. Pattern Generator

On-Screen Display Adjustment

1. Set the VOLUME to minimum.
2. Press the VOL. DOWN button on the set and the channel button (9) on the remote control for more than 2 seconds to display adjustment mode on the screen as shown in **Fig. 1-1**.

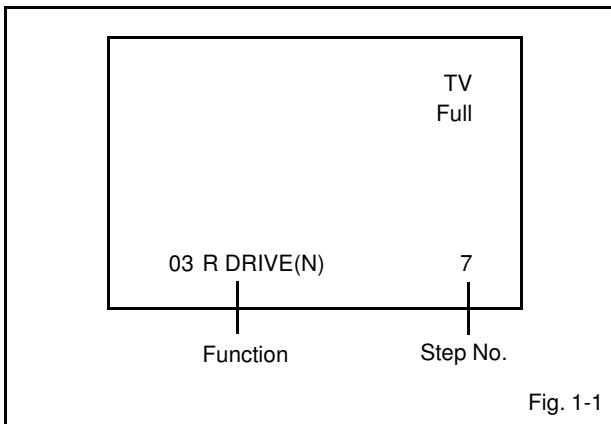


Fig. 1-1

3. Use the CH. UP/DOWN button or Channel button (0-9) on the remote control to select the options shown in **Fig. 1-2**.
4. Press the MENU button on the remote control to end the adjustments.
5. To display the adjustment screen for TV, AV, COMPONENT, HDMI and PC mode, press the INPUT SELECT button on the remote control.
6. Receive the DIGITAL broadcasting.
7. To display the adjustment screen for DTV mode, select the digital channel.
8. Press the VOL.DOWN button on the set and the channel (9) on the remote control for more than 2 seconds.

NO. FUNCTION	NO. FUNCTION
03 R DRIVE(N)	35 TINT
04 R CUTOFF(N)	36 SHARP H1 MAX
05 G DRIVE(N)	37 SHARP H1 MIN
06 G CUTOFF(N)	38 SHARP H2 MAX
07 B DRIVE(N)	39 SHARP H2 MIN
08 B CUTOFF(N)	40 SHARP H3 MAX
09 R DRIVE(C)	41 SHARP H3 MIN
10 R CUTOFF(C)	42 SHARP H4 MAX
11 G DRIVE(C)	43 SHARP H4 MIN
12 G CUTOFF(C)	44 SHARP H5 MAX
13 B DRIVE(C)	45 SHARP H5 MIN
14 B CUTOFF(C)	46 SHARP V1 MAX
15 R DRIVE(W)	47 SHARP V1 MIN
16 R CUTOFF(W)	48 SHARP V2 MAX
17 G DRIVE(W)	49 SHARP V2 MIN
18 G CUTOFF(W)	50 CONTRAST CENTER
19 B DRIVE(W)	51 CONTRAST MAX
20 B CUTOFF(W)	52 CONTRAST MIN
29 BAK LIGHT CENT	53 COLOR CENTER
30 BAK LIGHT MAX	54 COLOR MAX
31 BAK LIGHT MIN	55 COLOR MIN
32 BRIGHTNESS CENT	58 CONTRAST 40
33 BRIGHTNESS MAX	
34 BRIGHTNESS MIN	

Fig. 1-2

2. BASIC ADJUSTMENTS

2-1: WHITE BALANCE

1. Place the set in Aging Test for more than 15 minutes.
2. Receive the gray scale pattern from the Pattern Generator.
3. Press the INPUT SELECT button on the remote control to set to the AV mode.
4. Using the remote control, set the brightness and contrast to normal position.
5. Activate the adjustment mode display of **Fig. 1-1** and press the channel button (03) on the remote control to select "R DRIVE(N)".
6. Press the CH. UP/DOWN button on the remote control to select the "R CUTOFF(N)", "B DRIVE(N)", "B CUTOFF(N)", "R DRIVE(C)", "R CUTOFF(C)", "B DRIVE(C)", "B CUTOFF(C)", "R DRIVE(W)", "R CUTOFF(W)", "B DRIVE(W)" or "B CUTOFF(W)".
7. Adjust the VOL.UP/DOWN button on the remote control to whiten the R DRIVE(N), R CUTOFF(N), B DRIVE(N), B CUTOFF(N), R DRIVE(C), R CUTOFF(C), B DRIVE(C), B CUTOFF(C), R DRIVE(W), R CUTOFF(W), B DRIVE(W) and B CUTOFF(W) at each step tone sections equally.
8. Perform the above adjustments 6 and 7 until the white color is achieved.

ELECTRICAL ADJUSTMENTS

2-2: BRIGHTNESS CENT

1. Place the set in Aging Test for more than 15 minutes.
2. Receive the color bar pattern. (RF Input)
3. Using the remote control, set the brightness and contrast to normal position.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button (32) on the remote control to select "BRIGHTNESS CENT".
5. Press the VOL.UP/DOWN button on the remote control until the contrast step No. becomes "125".
6. Check if the picture is normal.
7. Receive the color bar pattern. (VIDEO Input)
8. Using the remote control, set the brightness and contrast to normal position.
9. Press the INPUT SELECT button on the remote control to set to the AV mode.
10. Activate the adjustment mode display of **Fig. 1-1** and press the channel button (32) on the remote control to select "BRIGHTNESS CENT".
11. Press the VOL.UP/DOWN button on the remote control until the contrast step No. becomes "126".
12. Check if the picture is normal.
13. Receive the color bar pattern. (S-VIDEO Input)
14. Using the remote control, set the brightness and contrast to normal position.
15. Press the INPUT SELECT button on the remote control to set to the AV(Y/C) mode. Then perform the above adjustments 10~12.
16. Receive the color bar pattern. (COMPONENT Input)
17. Using the remote control, set the brightness and contrast to normal position.
18. Press the INPUT SELECT button on the remote control to set to the COMPONENT mode.
19. Activate the adjustment mode display of **Fig. 1-1** and press the channel button (32) on the remote control to select "BRIGHTNESS CENT".
20. Press the VOL.UP/DOWN button on the remote control until the contrast step No. becomes "126".
21. Check if the picture is normal.
22. Receive the color bar pattern. (HDMI Input)
23. Using the remote control, set the brightness and contrast to normal position.
24. Press the INPUT SELECT button on the remote control to set to the HDMI mode.
25. Activate the adjustment mode display of **Fig. 1-1** and press the channel button (32) on the remote control to select "BRIGHTNESS CENT".
26. Press the VOL.UP/DOWN button on the remote control until the contrast step No. becomes "126".
27. Check if the picture is normal.

2-3: CONTRAST MAX

1. Place the set in Aging Test for more than 15 minutes.
2. Receive the color bar pattern. (RF Input)
3. Using the remote control, set the brightness and contrast to normal position.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button (51) on the remote control to select "CONTRAST MAX".
5. Press the VOL.UP/DOWN button on the remote control until the contrast step No. becomes "167".
6. Check if the picture is normal.
7. Receive the color bar pattern. (VIDEO Input)
8. Using the remote control, set the brightness and contrast to normal position.
9. Press the INPUT SELECT button on the remote control to set to the AV mode.
10. Activate the adjustment mode display of **Fig. 1-1** and press the channel button (51) on the remote control to select "CONTRAST MAX".
11. Press the VOL.UP/DOWN button on the remote control until the contrast step No. becomes "137".
12. Check if the picture is normal.
13. Receive the color bar pattern. (S-VIDEO Input)
14. Using the remote control, set the brightness and contrast to normal position.
15. Press the INPUT SELECT button on the remote control to set to the AV(Y/C) mode. Then perform the above adjustments 10~12.
16. Receive the color bar pattern. (COMPONENT Input)
17. Using the remote control, set the brightness and contrast to normal position.
18. Press the INPUT SELECT button on the remote control to set to the COMPONENT mode.
19. Activate the adjustment mode display of **Fig. 1-1** and press the channel button (51) on the remote control to select "CONTRAST MAX".
20. Press the VOL.UP/DOWN button on the remote control until the contrast step No. becomes "134".
21. Check if the picture is normal.
22. Receive the color bar pattern. (HDMI Input)
23. Using the remote control, set the brightness and contrast to normal position.
24. Press the INPUT SELECT button on the remote control to set to the HDMI mode.
25. Activate the adjustment mode display of **Fig. 1-1** and press the channel button (51) on the remote control to select "CONTRAST MAX".
26. Press the VOL.UP/DOWN button on the remote control until the contrast step No. becomes "137".
27. Check if the picture is normal.

ELECTRICAL ADJUSTMENTS

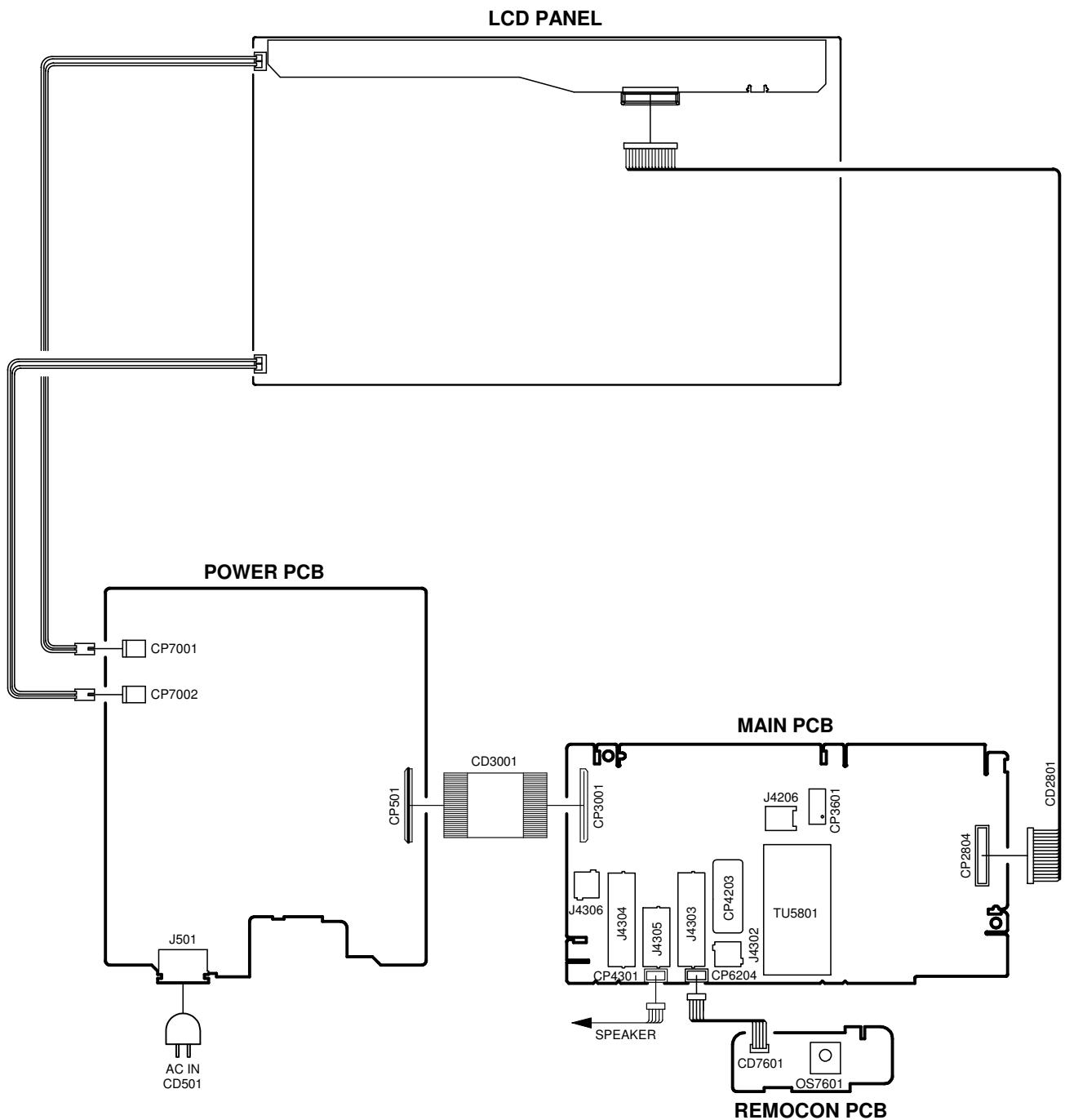
2-4: Confirmation of Fixed Value (Step No.)

Please check if the fixed values of each of the adjustment item is set correctly referring below. (**TV/AV/COMPONENT/HDMI//PC/DTV**)

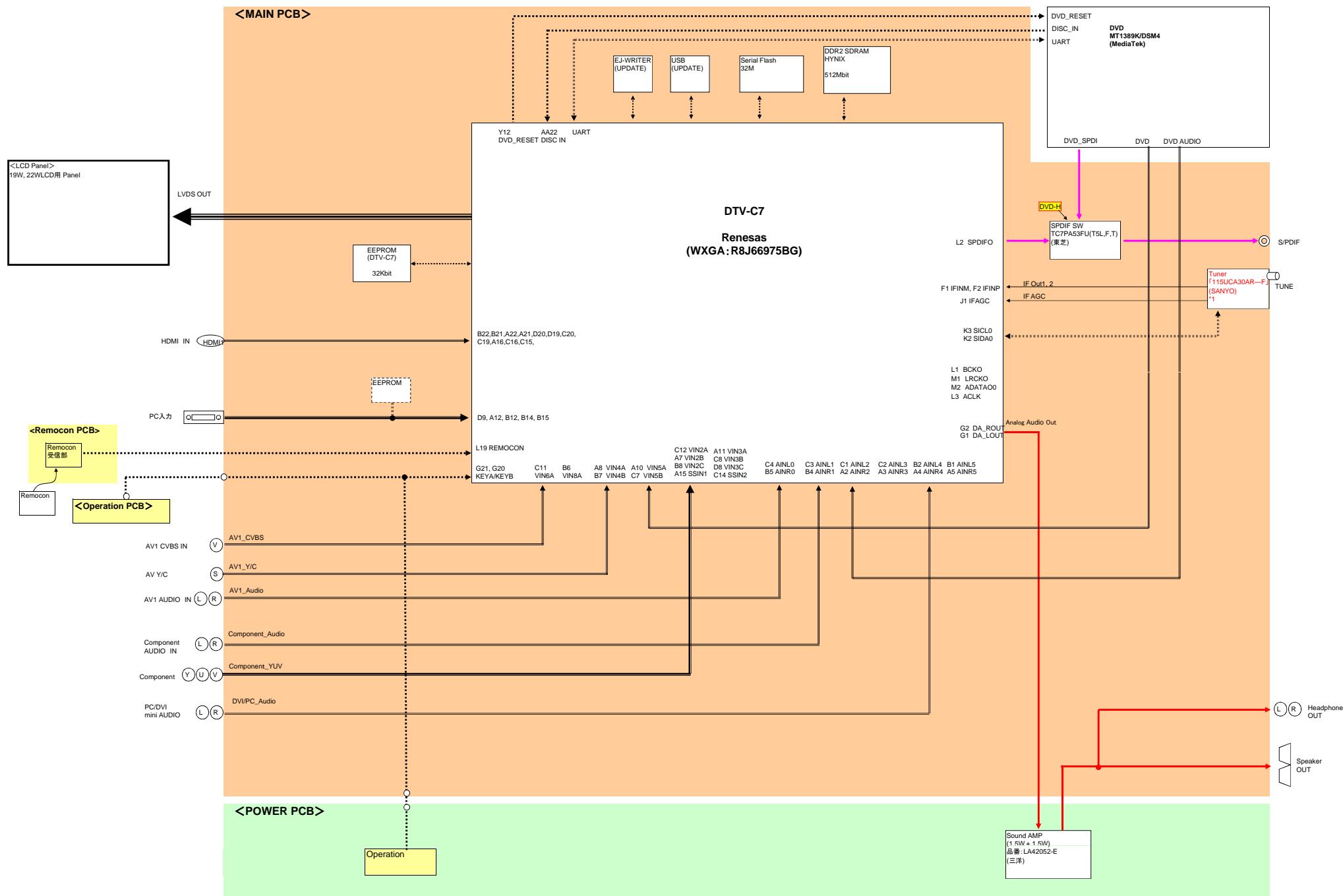
NOTE: For the step no. with * mark, please adjust it according to the situation of the set.

ELECTRICAL ADJUSTMENTS

3. ELECTRICAL ADJUSTMENT PARTS LOCATION GUIDE (WIRING CONNECTION)

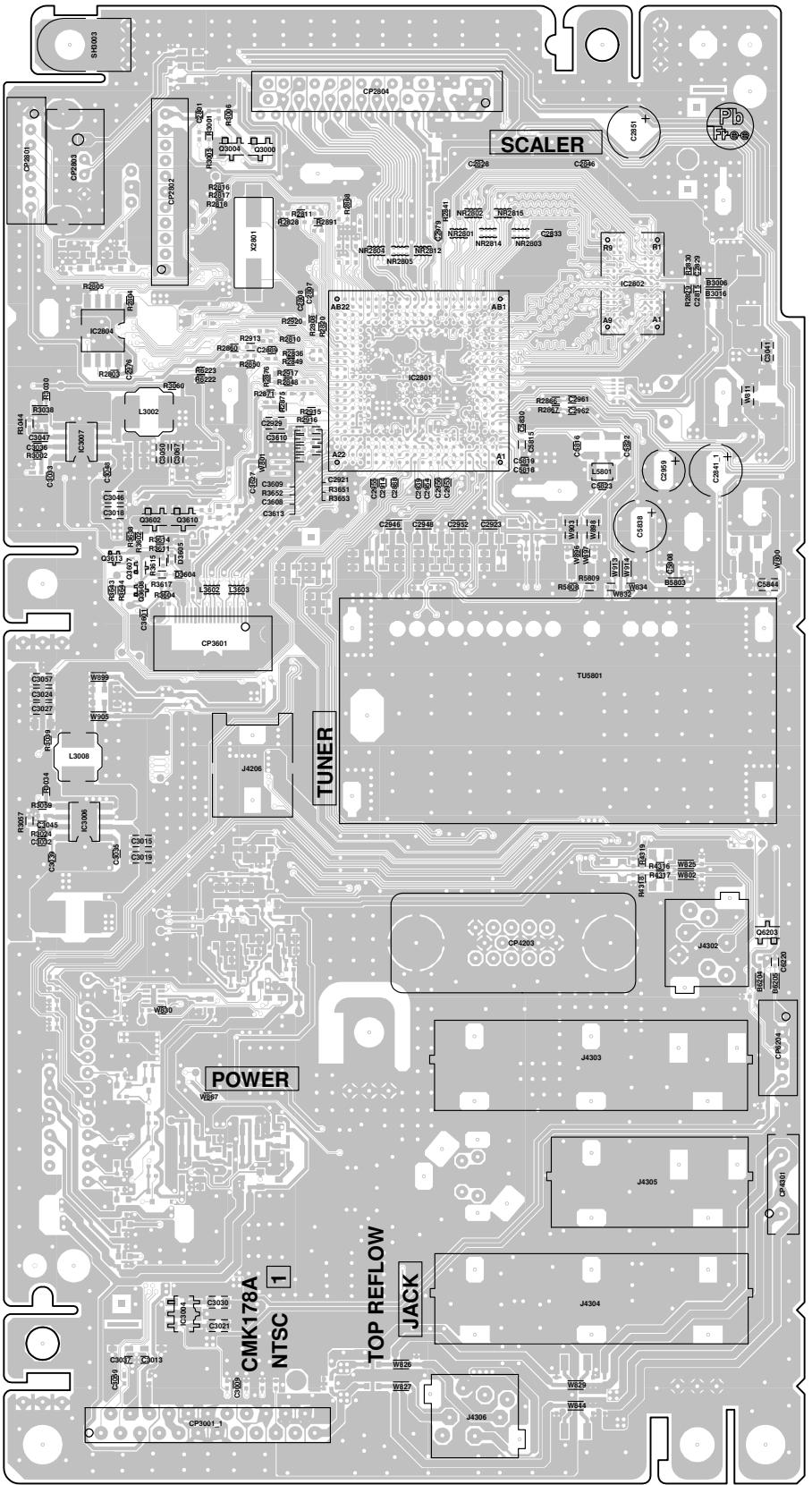


BLOCK DIAGRAM

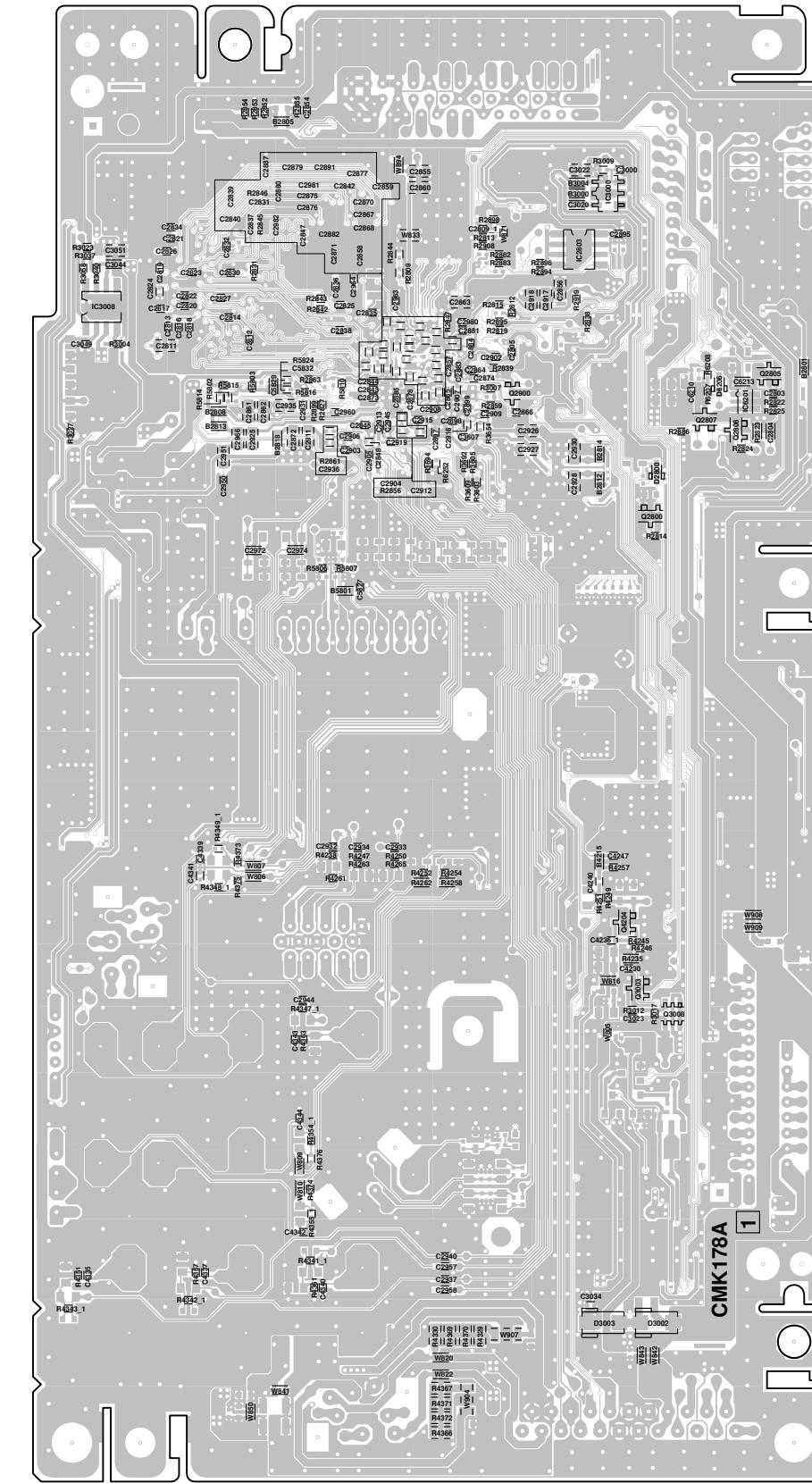


PRINTED CIRCUIT BOARDS

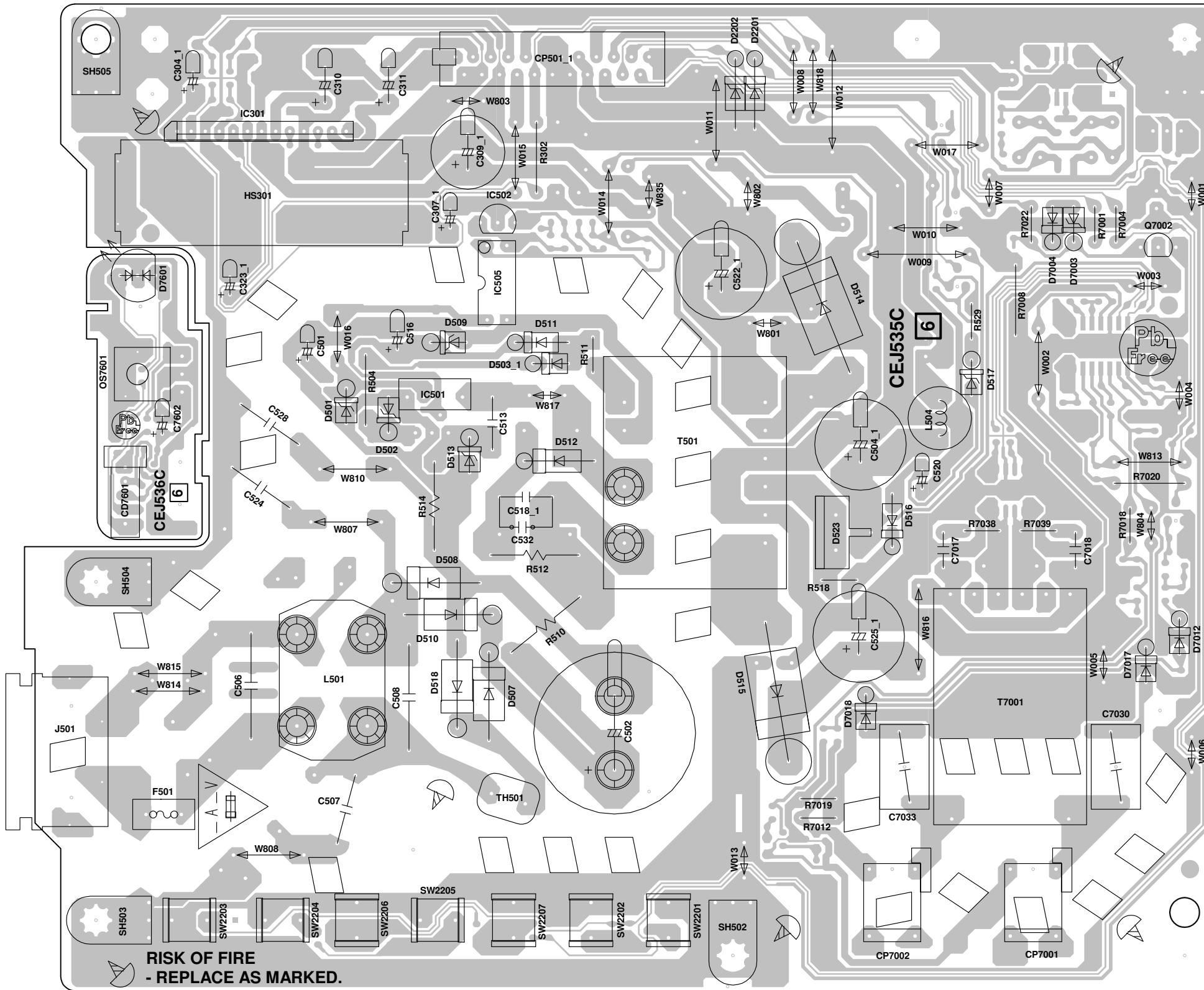
MAIN (TOP SIDE)



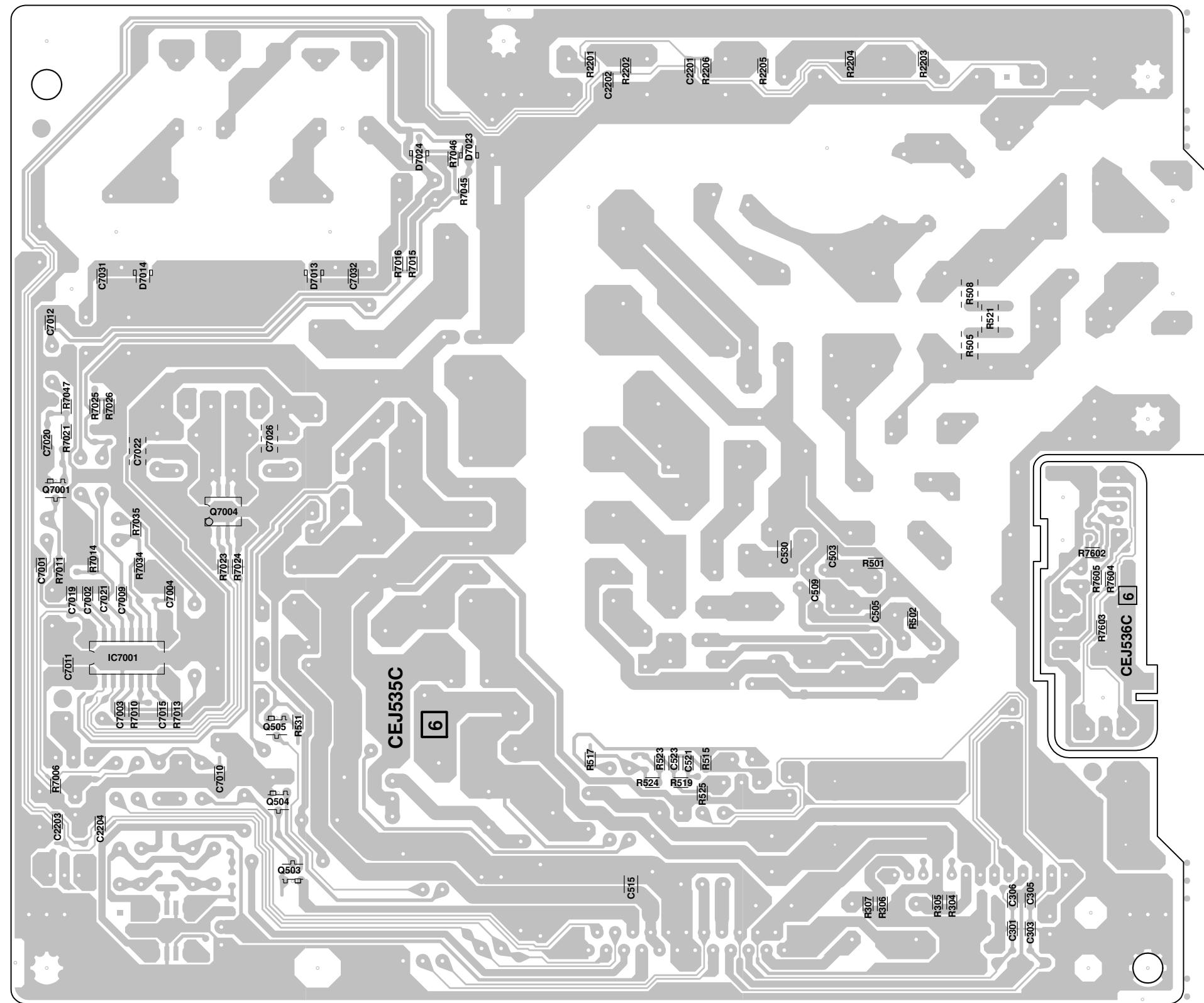
MAIN (BOTTOM SIDE)



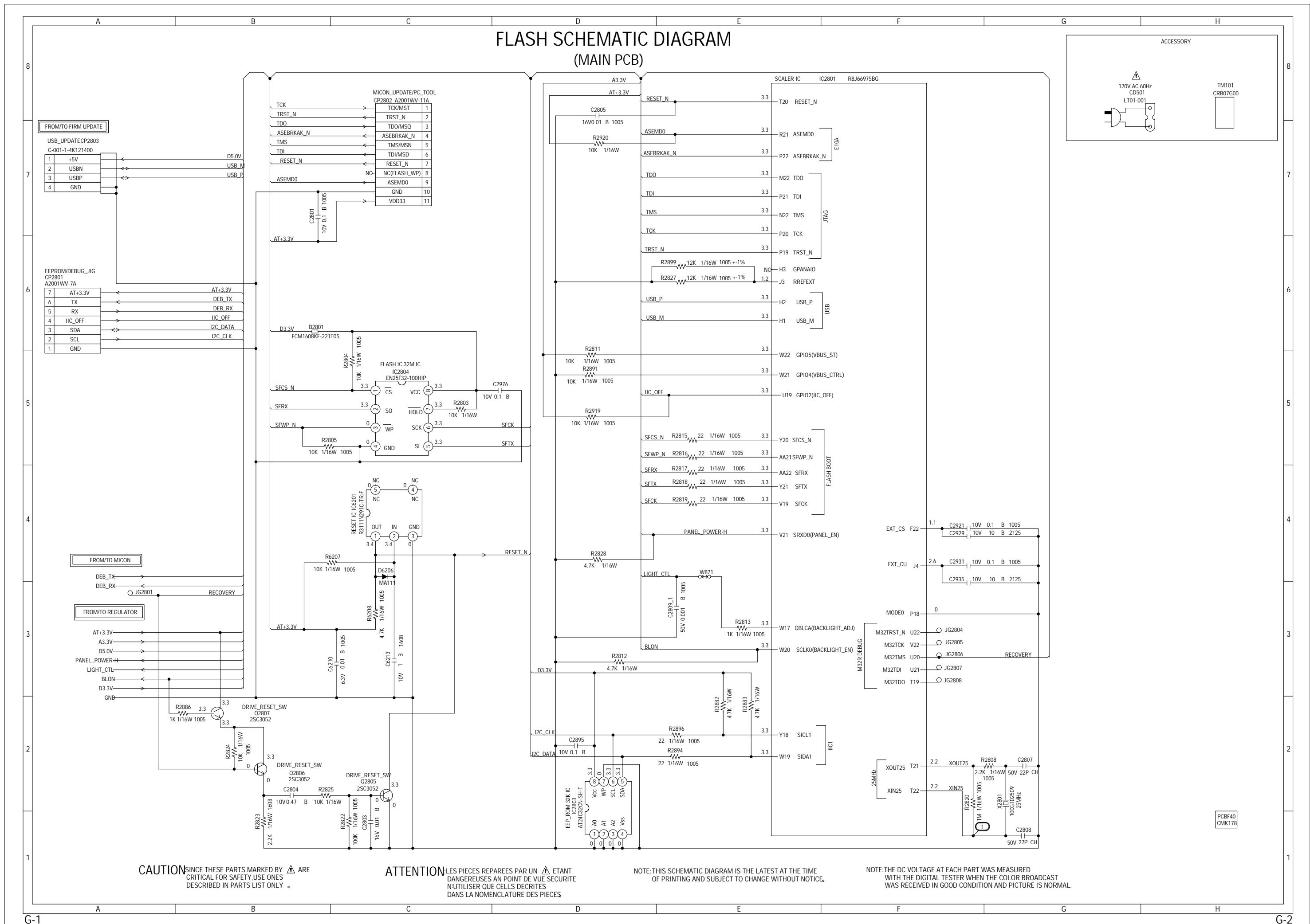
**PRINTED CIRCUIT BOARDS
POWER/REMOCON (INSERTED PARTS)
SOLDER SIDE**



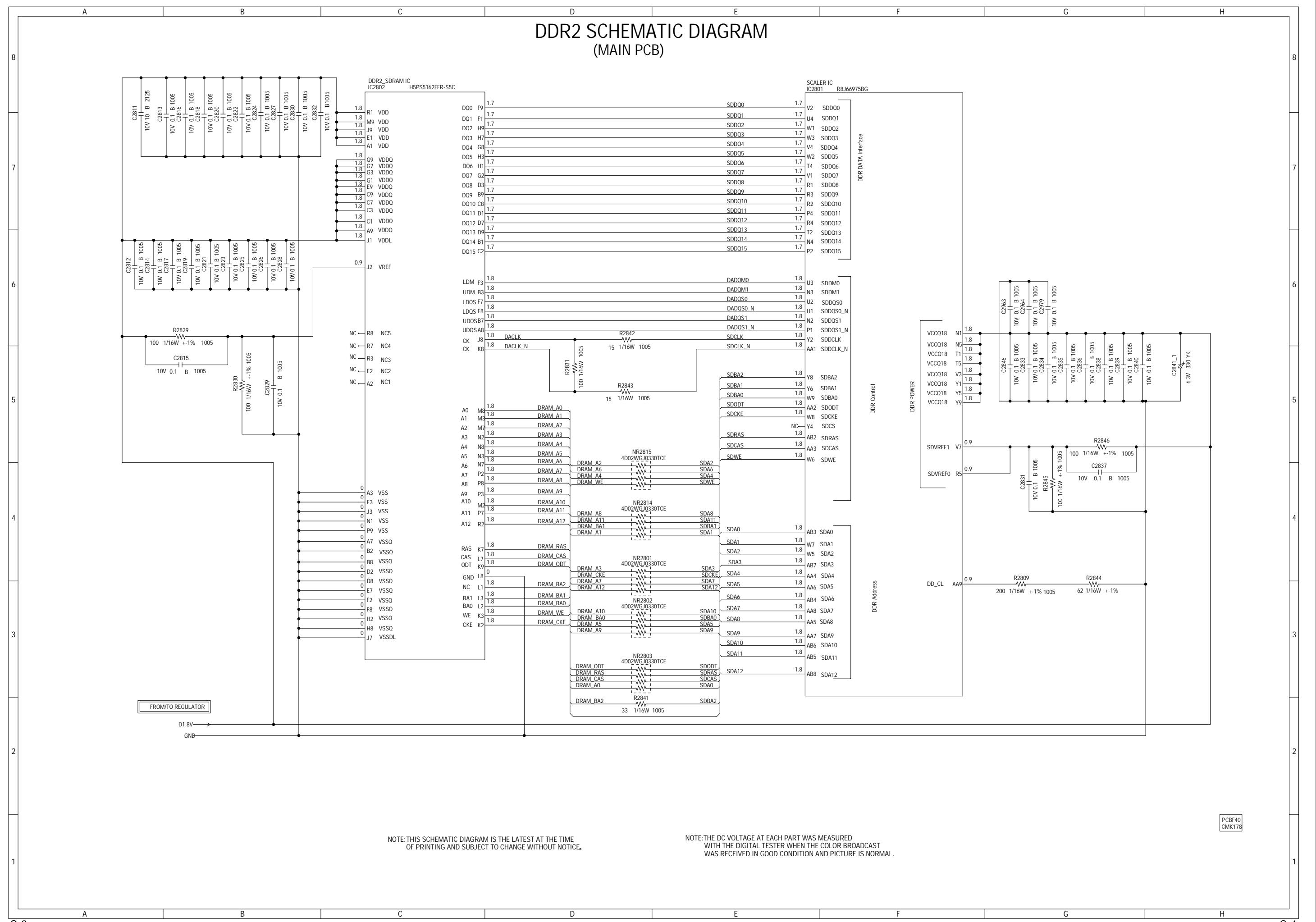
**PRINTED CIRCUIT BOARDS
POWER/REMOCON (CHIP MOUNTED PARTS)
SOLDER SIDE**



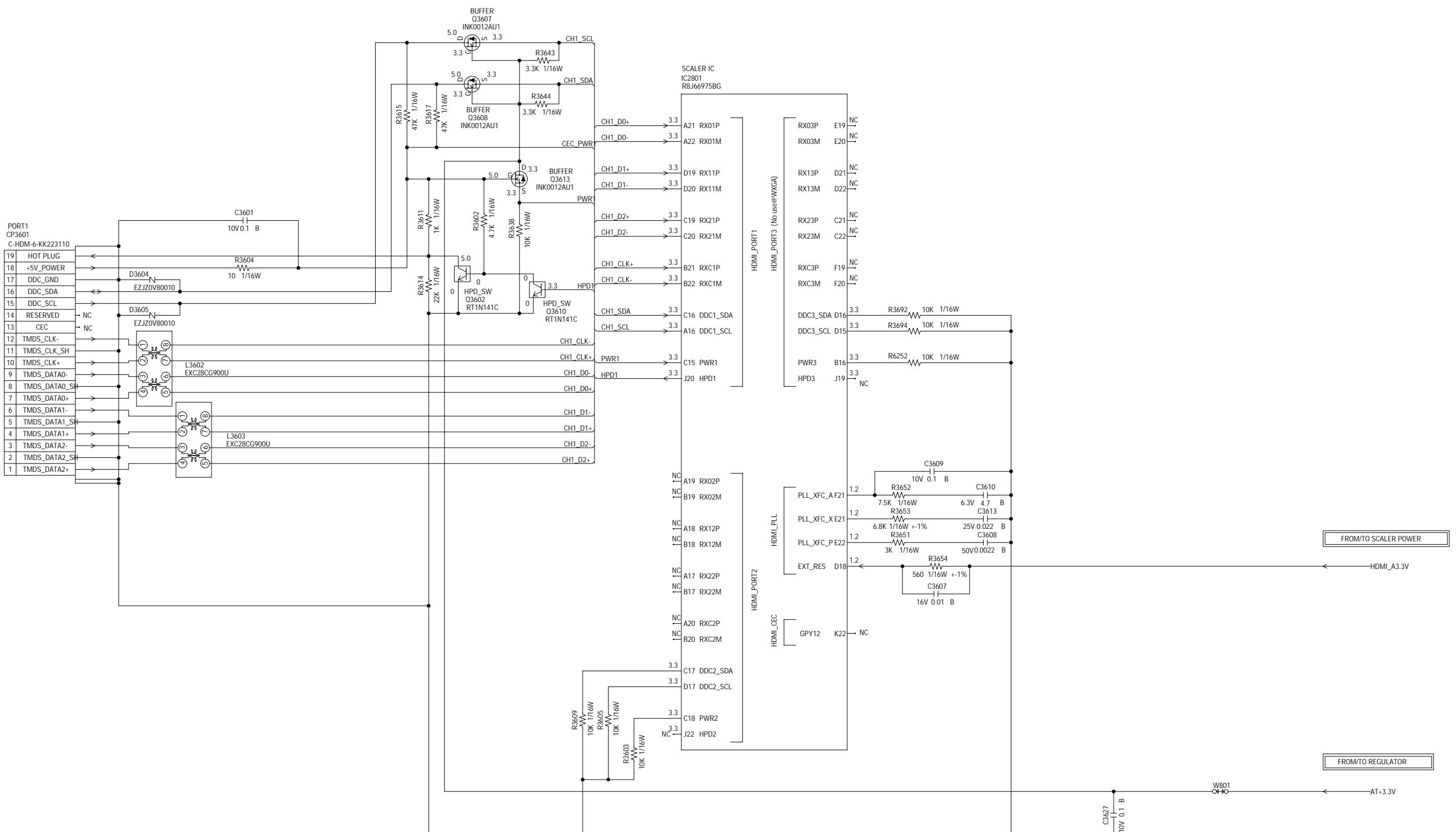
FLASH SCHEMATIC DIAGRAM (MAIN PCB)



DDR2 SCHEMATIC DIAGRAM (MAIN PCB)



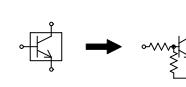
HDMI SCHEMATIC DIAGRAM (MAIN PCB)



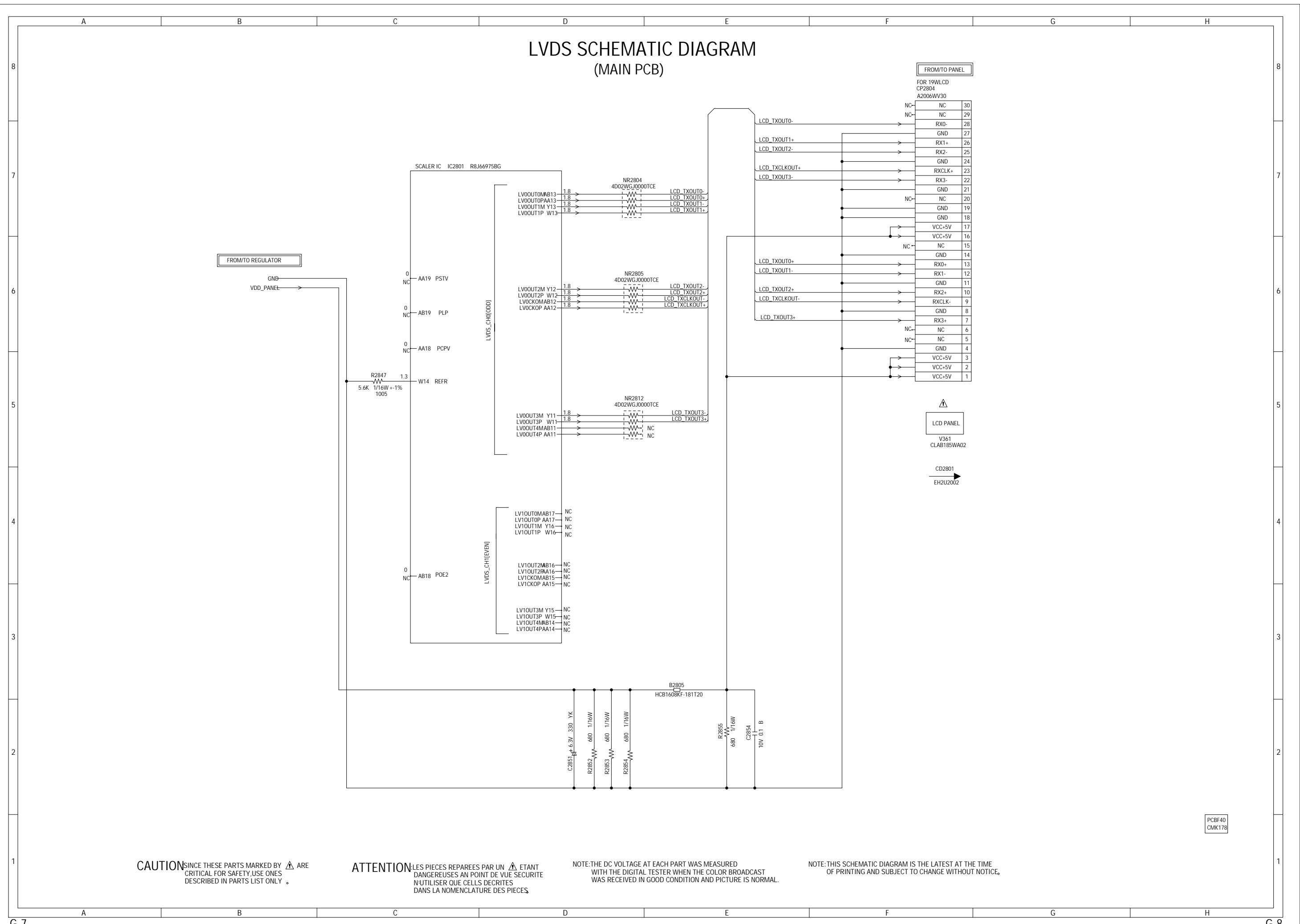
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME
OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED
WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST
WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

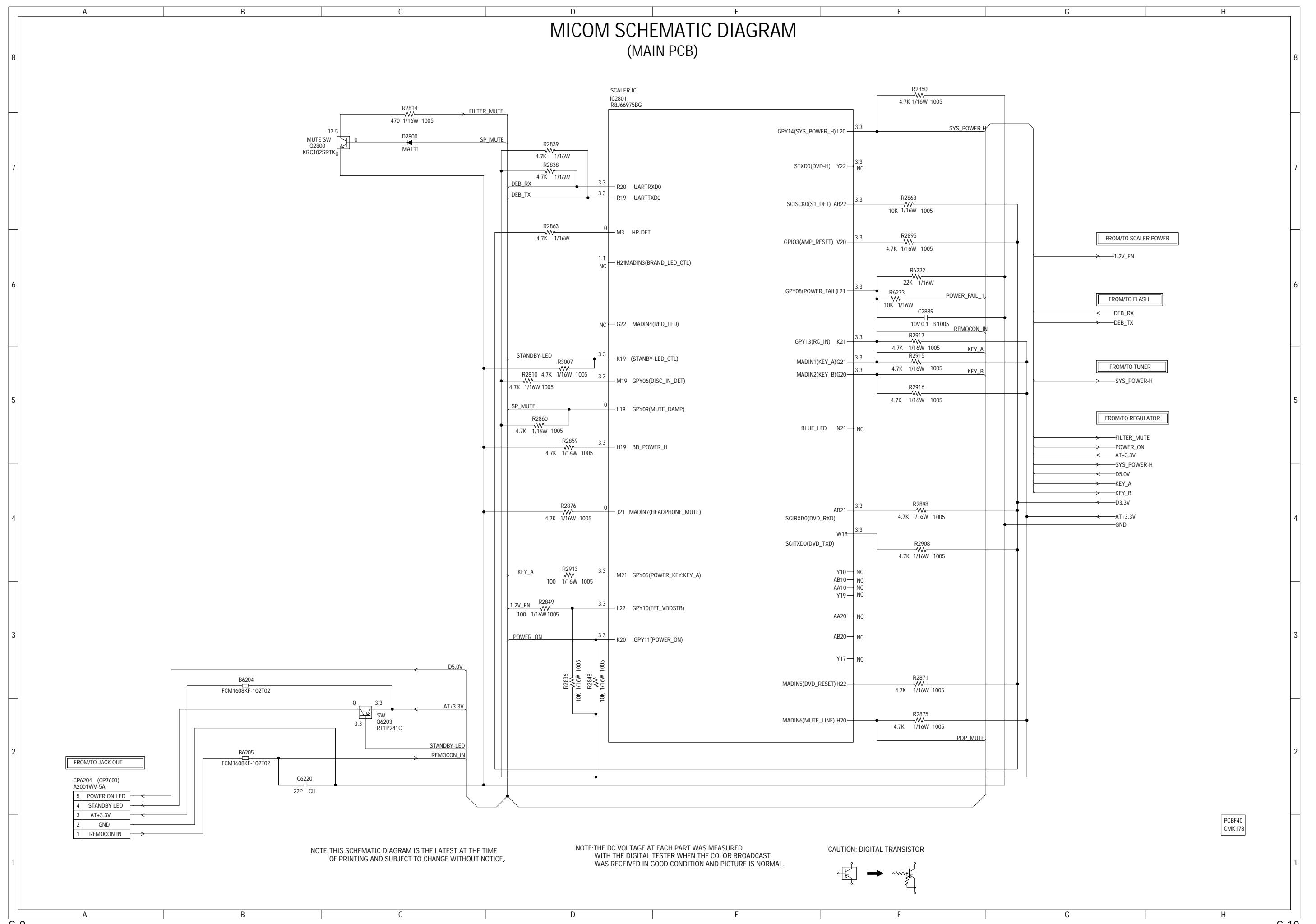
CAUTION: DIGITAL TRANSISTOR



PCBF40
CMK178

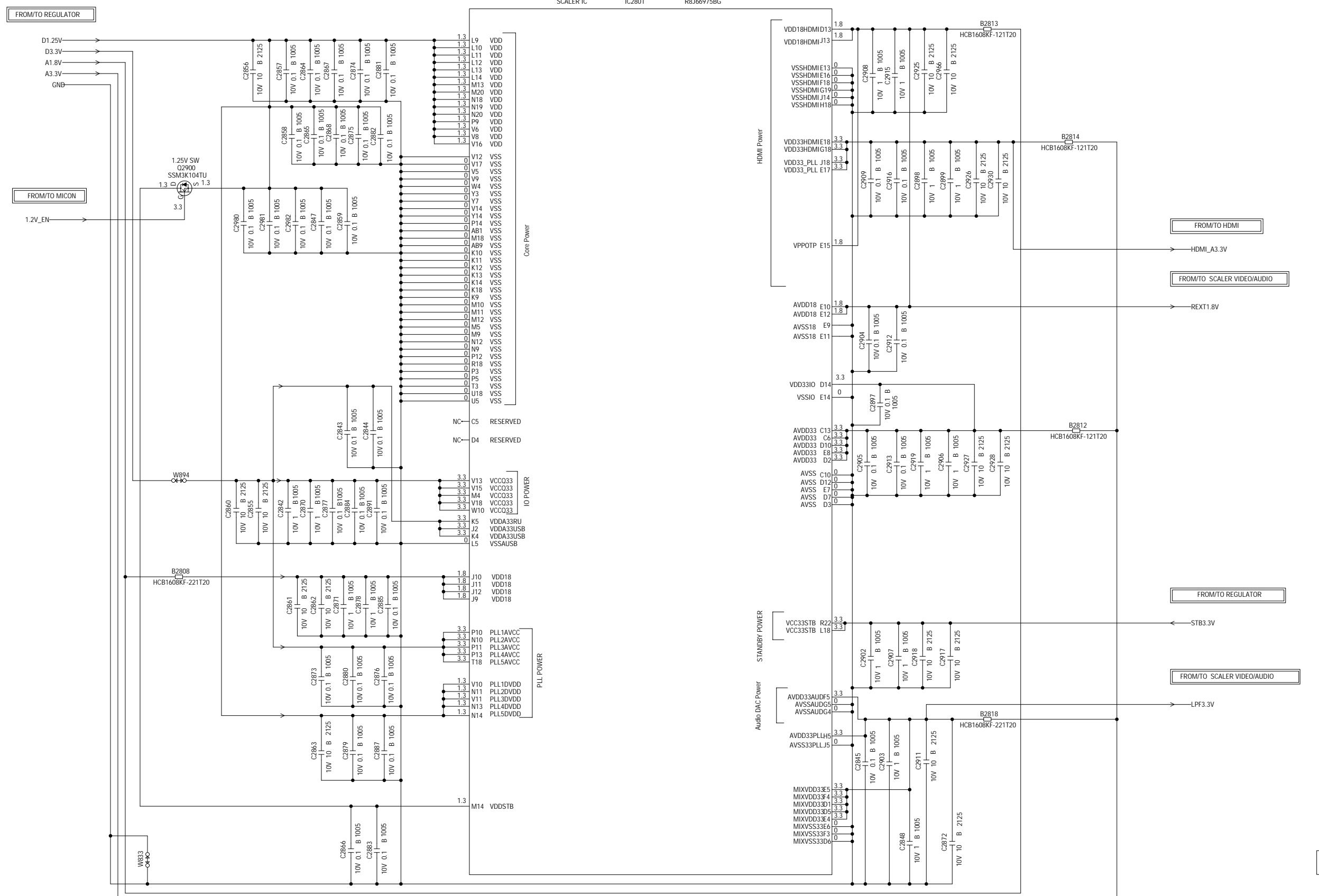


MICOM SCHEMATIC DIAGRAM (MAIN PCB)



SCALER POWER SCHEMATIC DIAGRAM

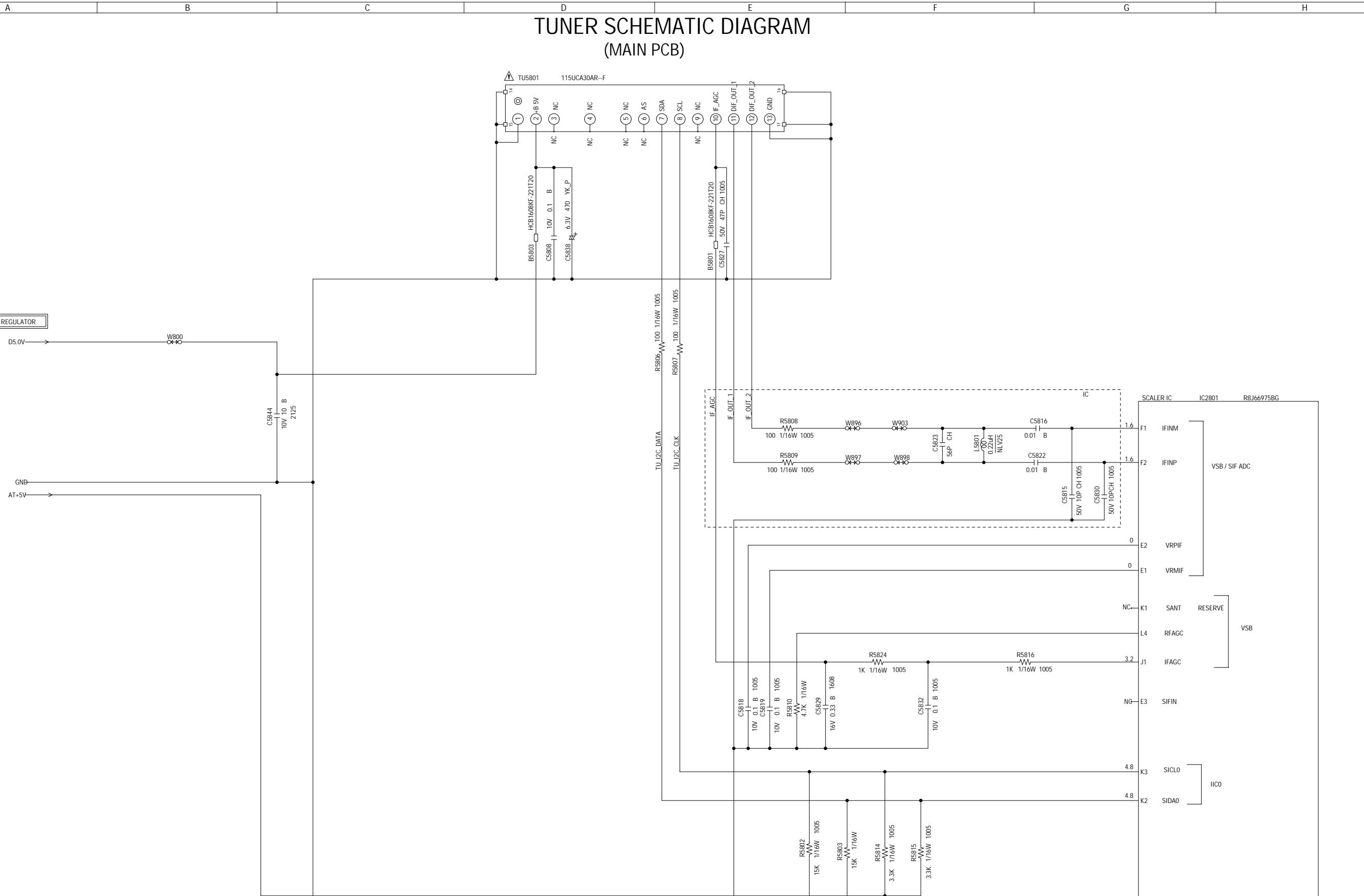
(MAIN PCB)



NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME
OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED
WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST
WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL

TUNER SCHEMATIC DIAGRAM (MAIN PCB)



CAUTION: SINCE THESE PARTS MARKED BY ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY.

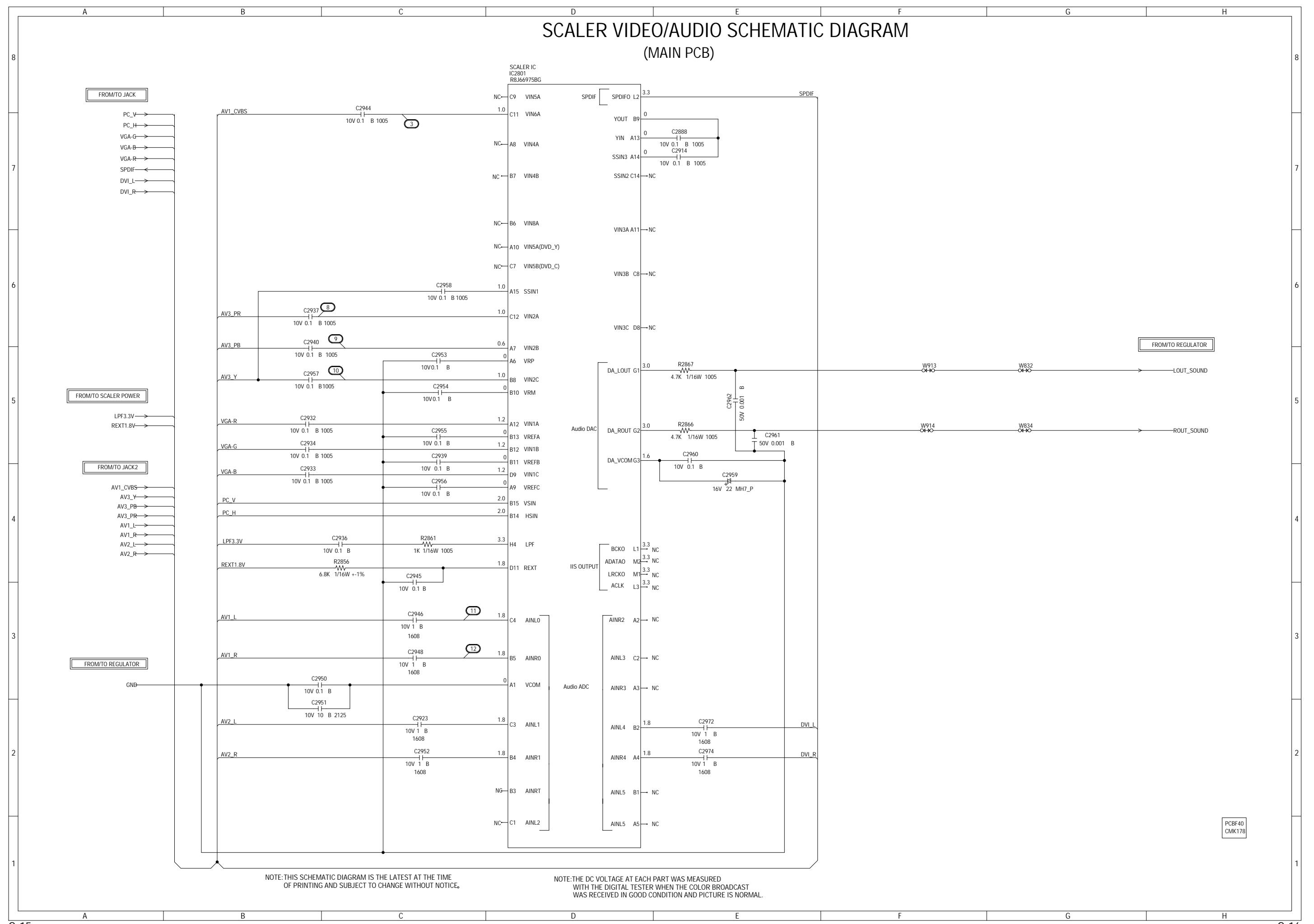
ATTENTION: LES PIECES REPEREES PAR UN ETANT DANGEREUSES AU POINT DE VUE SECURITE N'UTILISER QUE CELLES DECrites DANS LA NOMENCLATURE DES PIECES

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

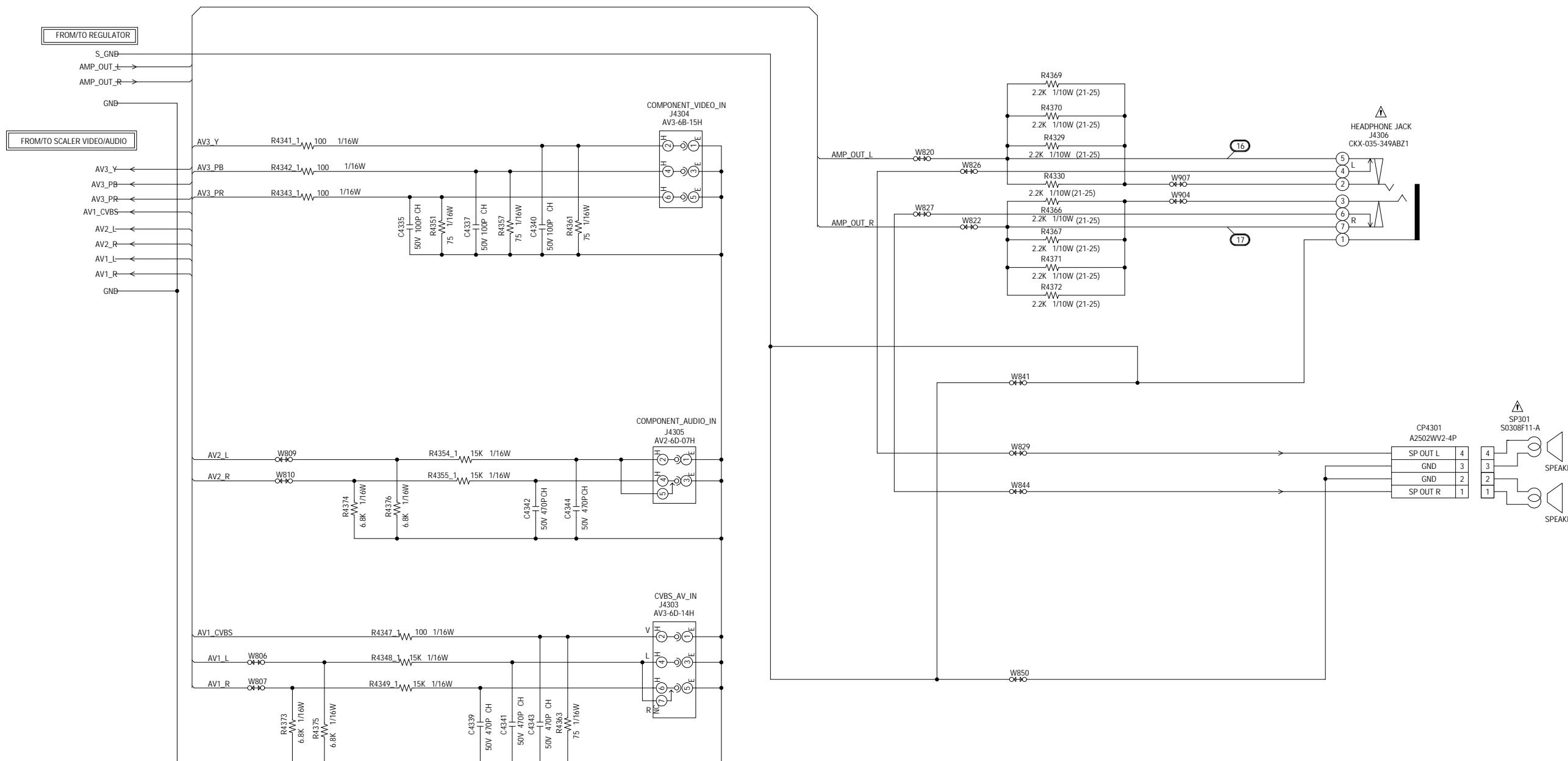
PCBF40
CMK178

SCALER VIDEO/AUDIO SCHEMATIC DIAGRAM (MAIN PCB)



JACK2 SCHEMATIC DIAGRAM

(MAIN PCB)



CAUTION SINCE THESE PARTS MARKED BY ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY.

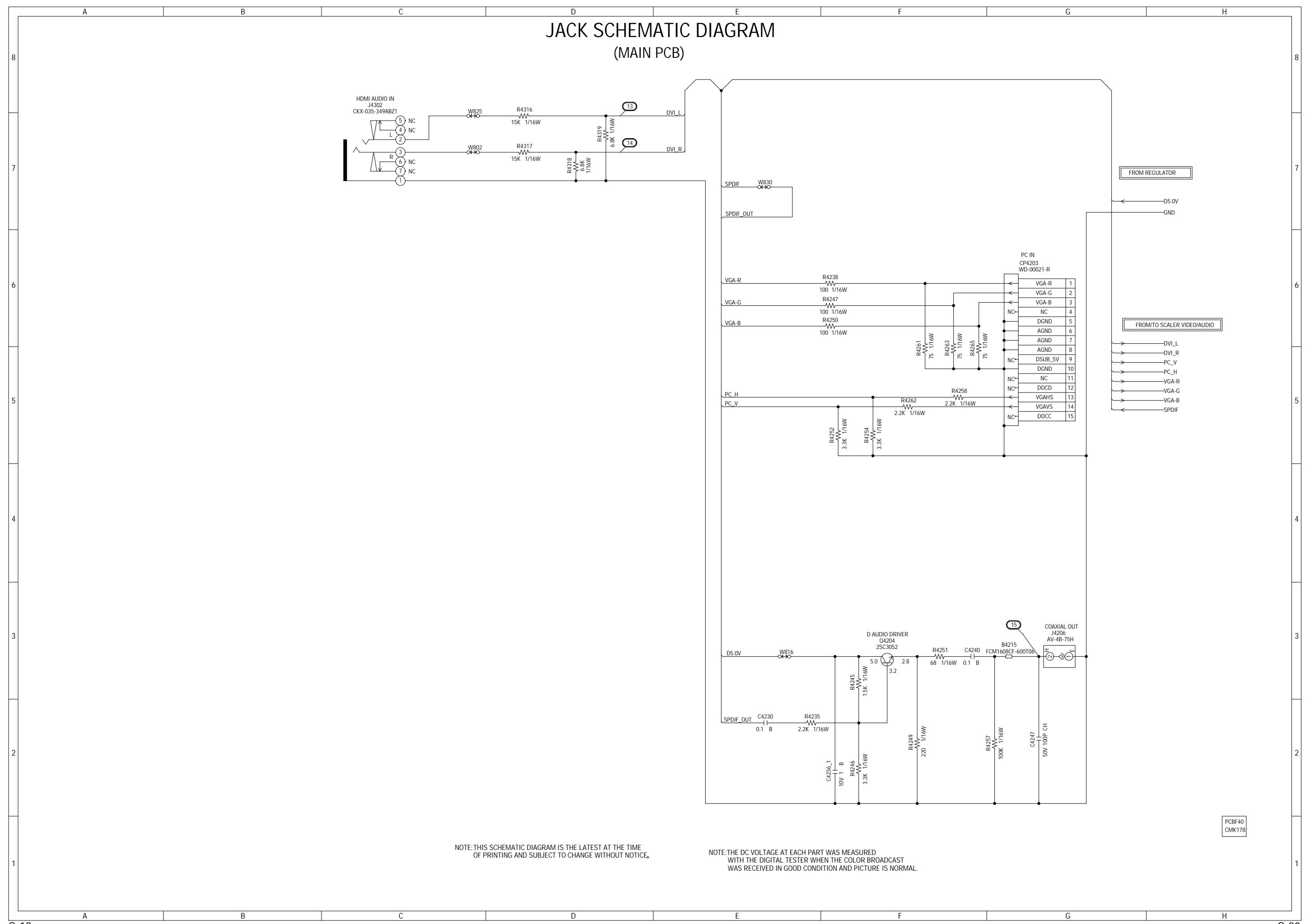
ATTENTION LES PIECES REPARÉES PAR UN ETANT DANGEREUSES EN POINT DE VUE SÉCURITÉ N'UTILISER QUE CELLES DÉCRITES DANS LA NOMENCLATURE DES PIÈCES.

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

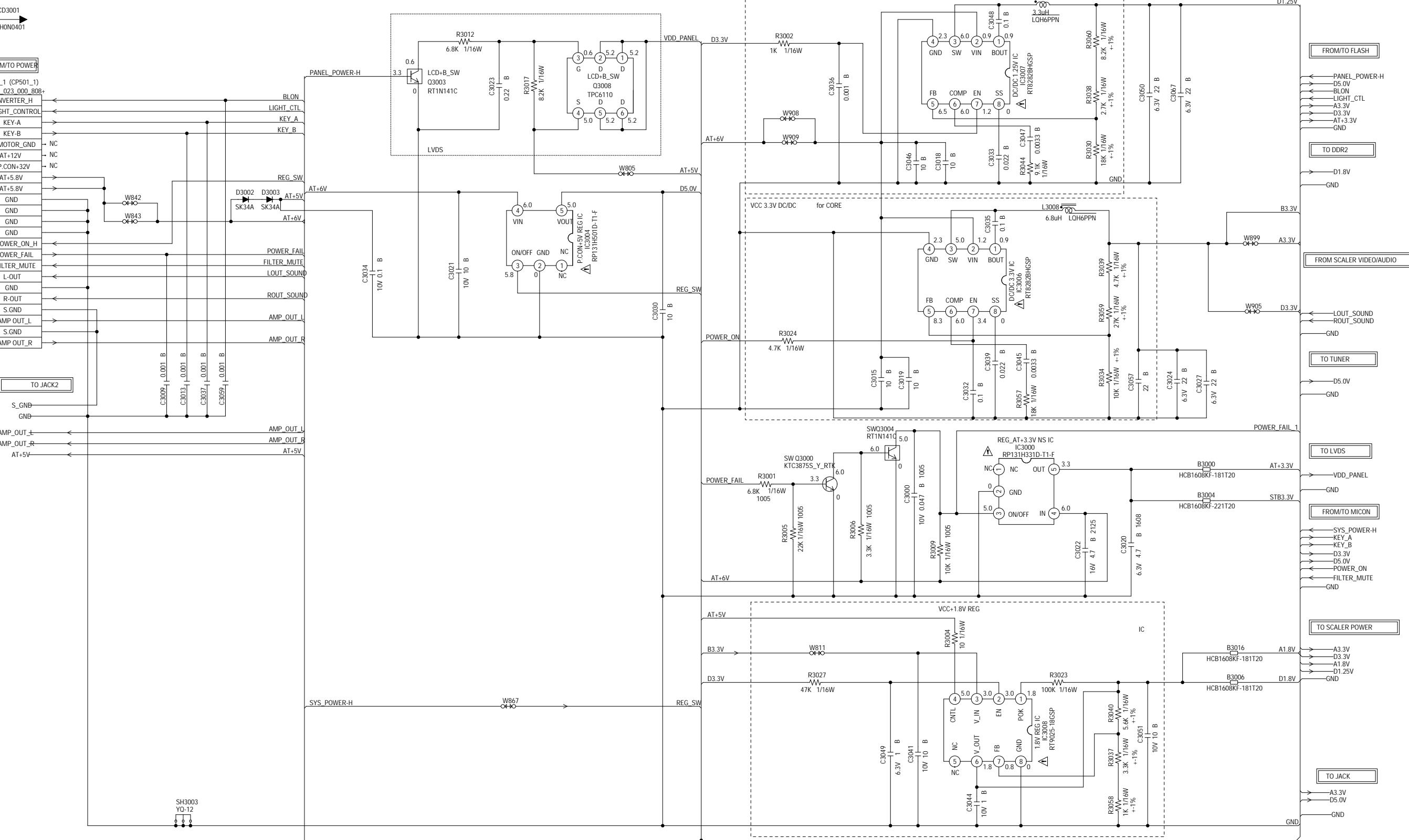
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

PCBF40
CMK178

**JACK SCHEMATIC DIAGRAM
(MAIN PCB)**



REGULATOR SCHEMATIC DIAGRAM (MAIN PCB)



CAUTION SINCE THESE PARTS MARKED BY  ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY.

ATTENTION: LES PIECES REPARÉES PAR UN  ETANT DANGEREUSES EN POINT DE VUE SÉCURITÉ, N'UTILISER QUE CELLES DÉCRITES DANS LA NOMENCLATURE DES PIÈCES.

NOTE:THE DC VOLTAGE AT EACH PART WAS MEASURED
WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST
WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMA

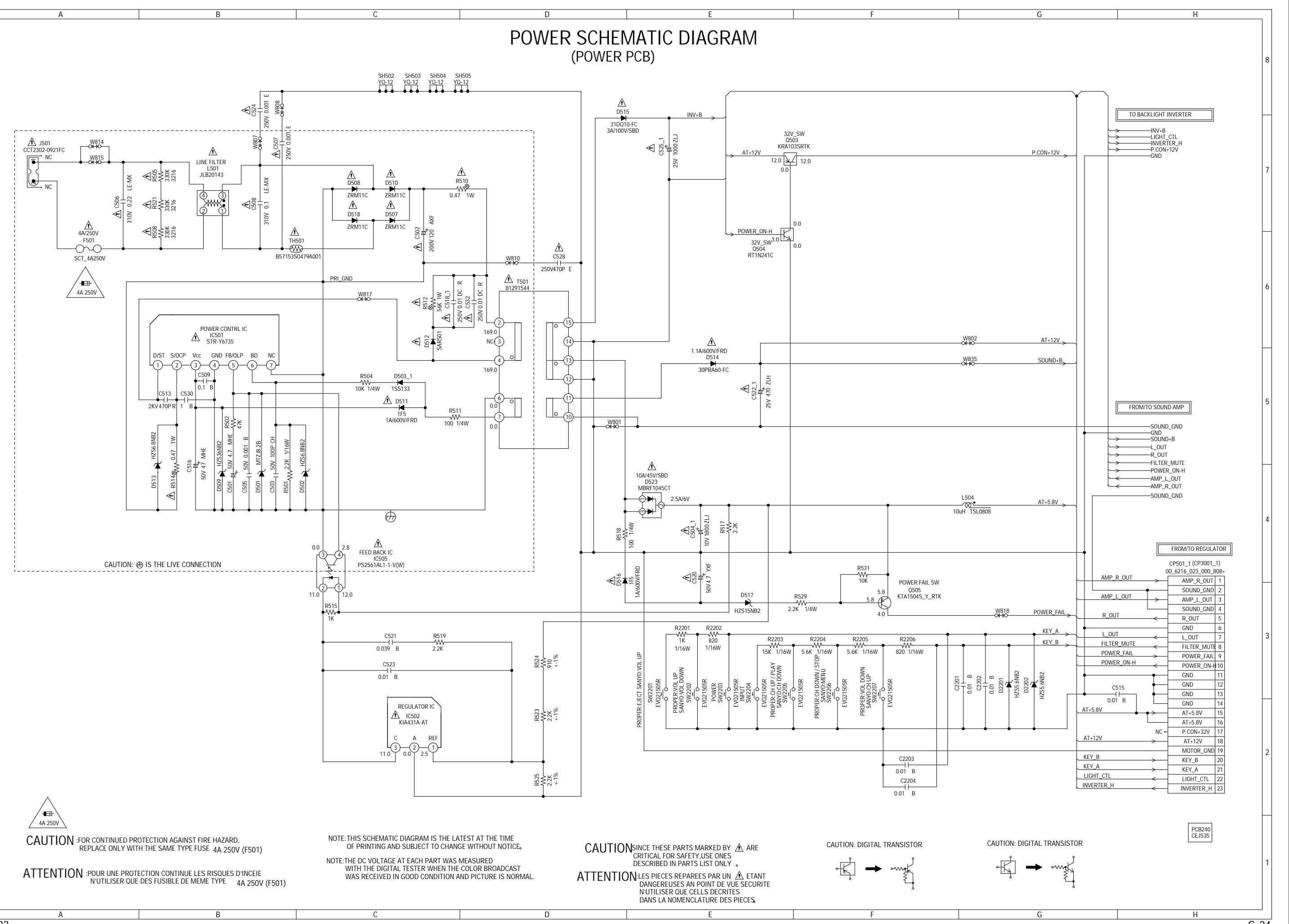
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME
OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE

CAUTION: DIGITAL TRANSISTOR

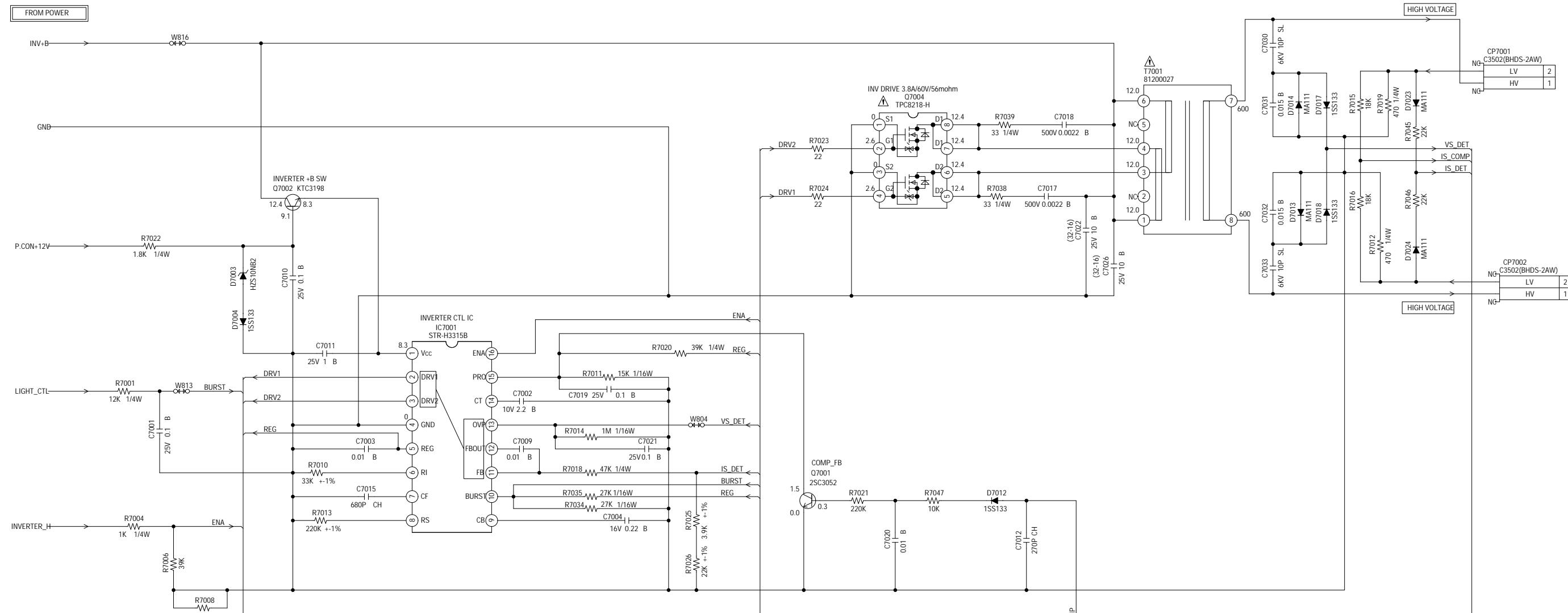


PCBF40
CMK178

POWER SCHEMATIC DIAGRAM (POWER PCB)



BACKLIGHT INVERTER SCHEMATIC DIAGRAM (POWER PCB)



CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD,
REPLACE ONLY WITH THE SAME TYPE FUSE 2.5A 125V(F7001)

ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQUES D'INCEIE
N'UTILISER QUE DES FUSIBLE DE MEME TYPE 2.5A 125V(F7001)

CAUTION: F7001 IS MANUFACTURED BY SKYGATE CO.,LTD., TYPE 20N.

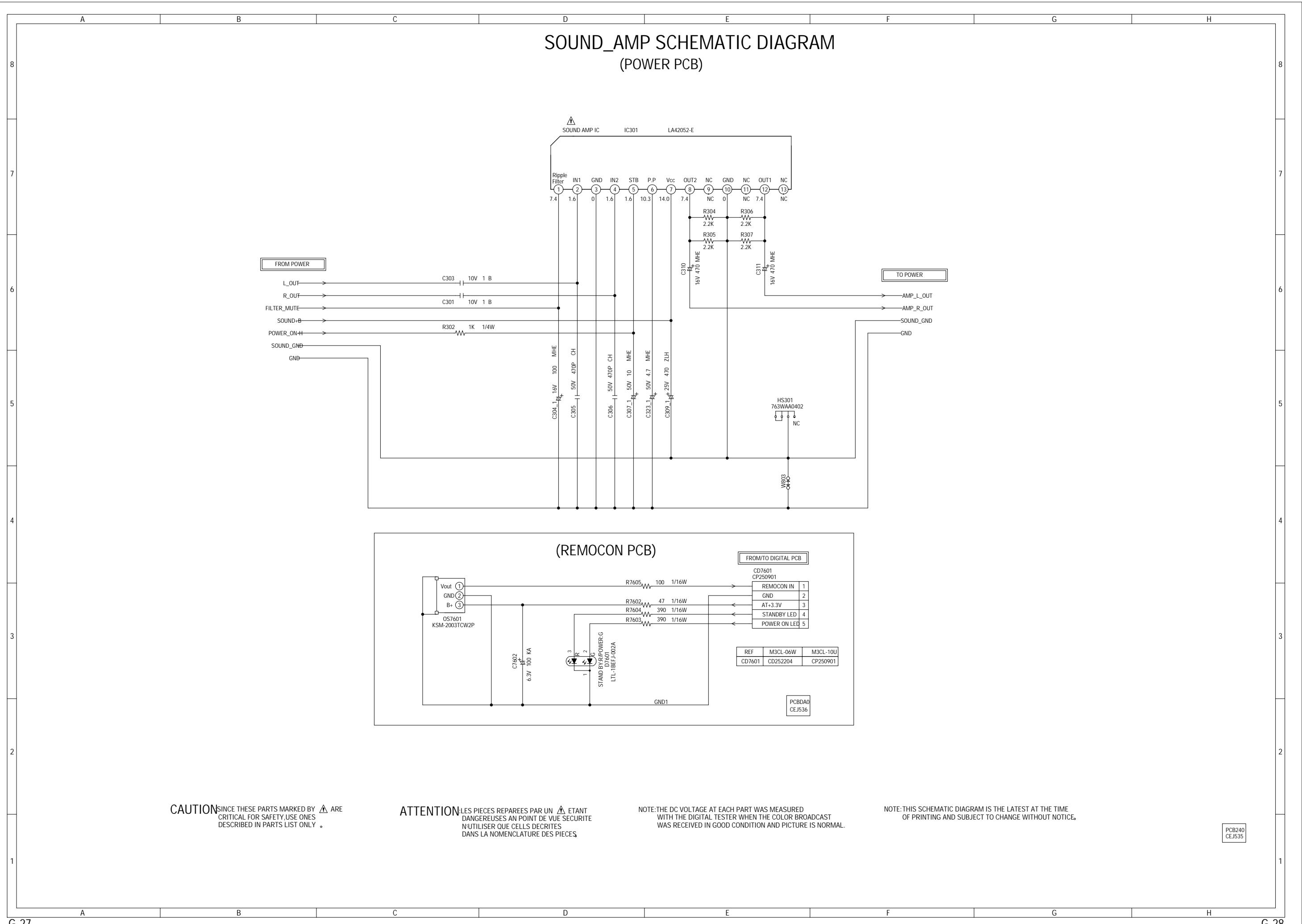
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME
OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED
WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST
WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

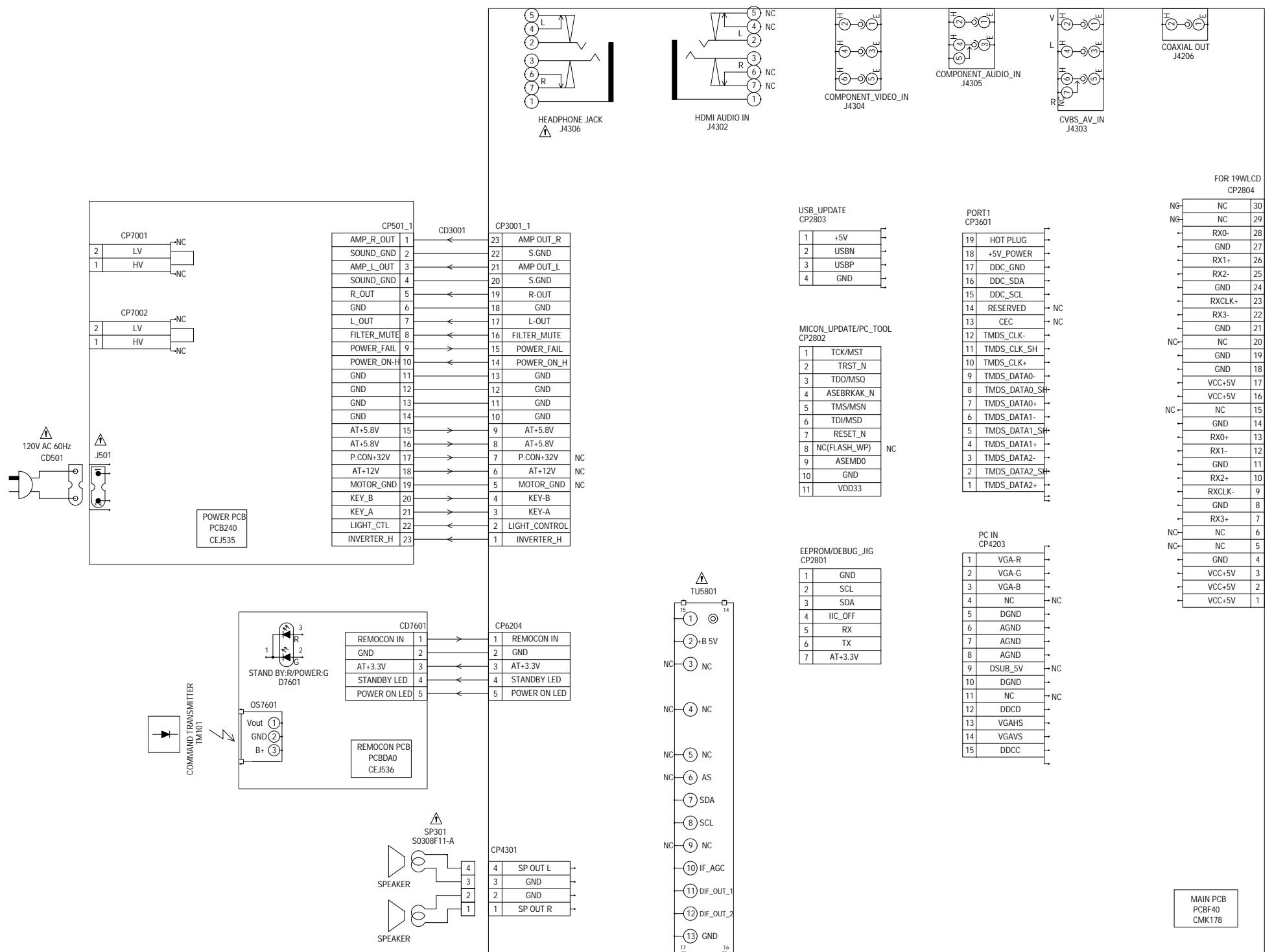
ATTENTION: LES PIECES REPARÉES PAR UN ETANT
DANGEREUSES AU POINT DE VUE SÉCURITÉ
N'UTILISER QUE CELLES DÉCRITES
DANS LA NOMENCLATURE DES PIÈCES.

CAUTION: SINCE THESE PARTS MARKED BY ARE
CRITICAL FOR SAFETY, USE ONES
DESCRIBED IN PARTS LIST ONLY.

PCB240
CEJ535



INTERCONNECTION DIAGRAM



CAUTION SINCE THESE PARTS MARKED BY ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY.

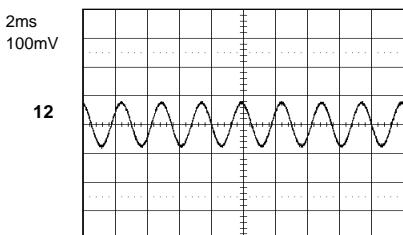
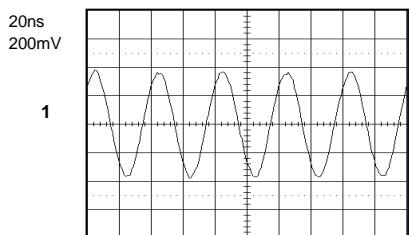
ATTENTION: LES PIECES REPARÉES PAR UN  ETANT DANGEREUSES AU POINT DE VUE SÉCURITÉ, N'UTILISER QUE CELLES DÉCRITES DANS LA NOMENCLATURE DES PIÈCES.

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED
WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST
WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

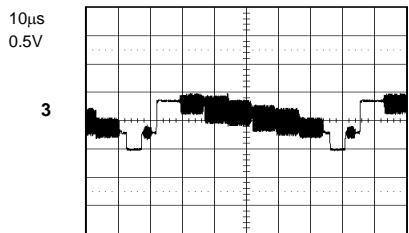
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME
OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

WAVEFORMS

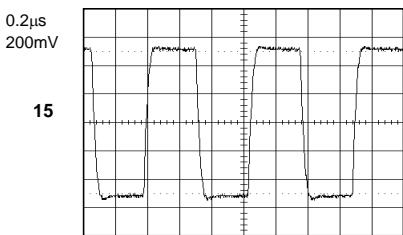
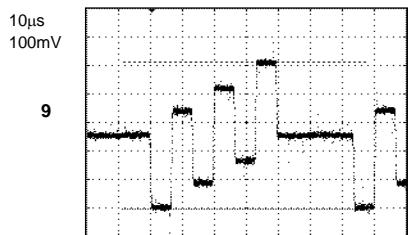
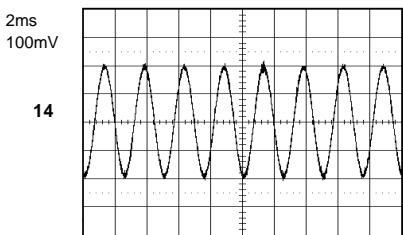
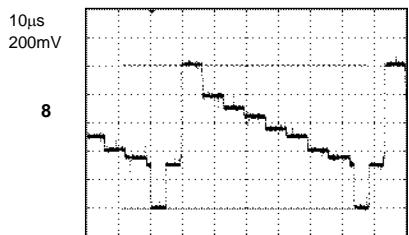
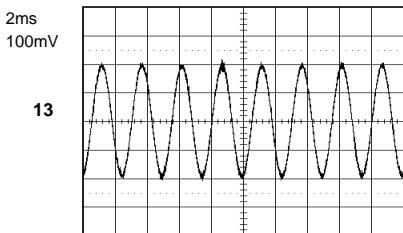
FLASH



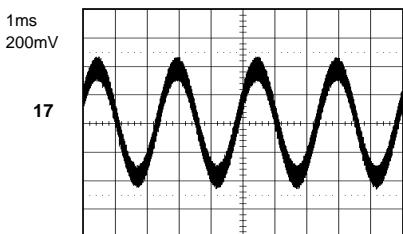
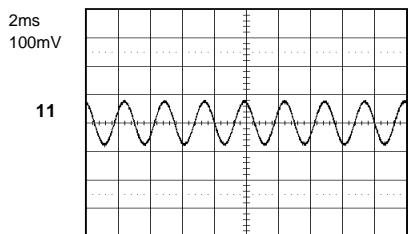
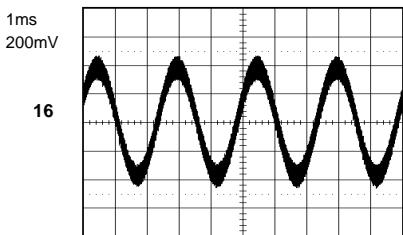
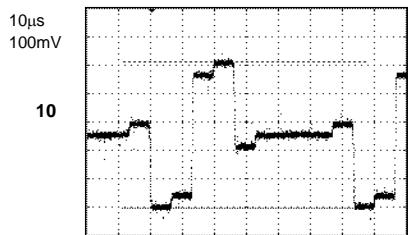
SCALER VIDEO/AUDIO



JACK

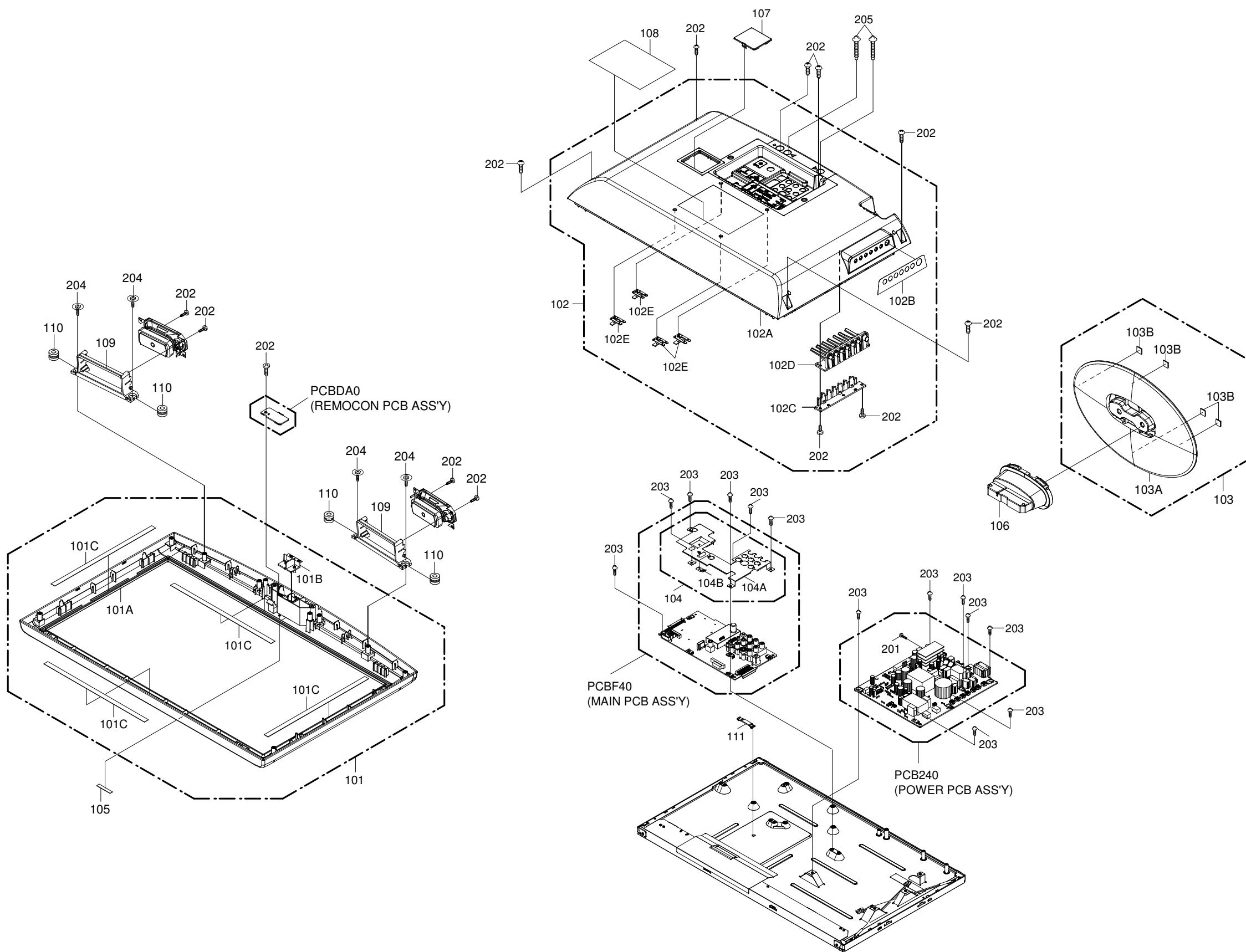


JACK2

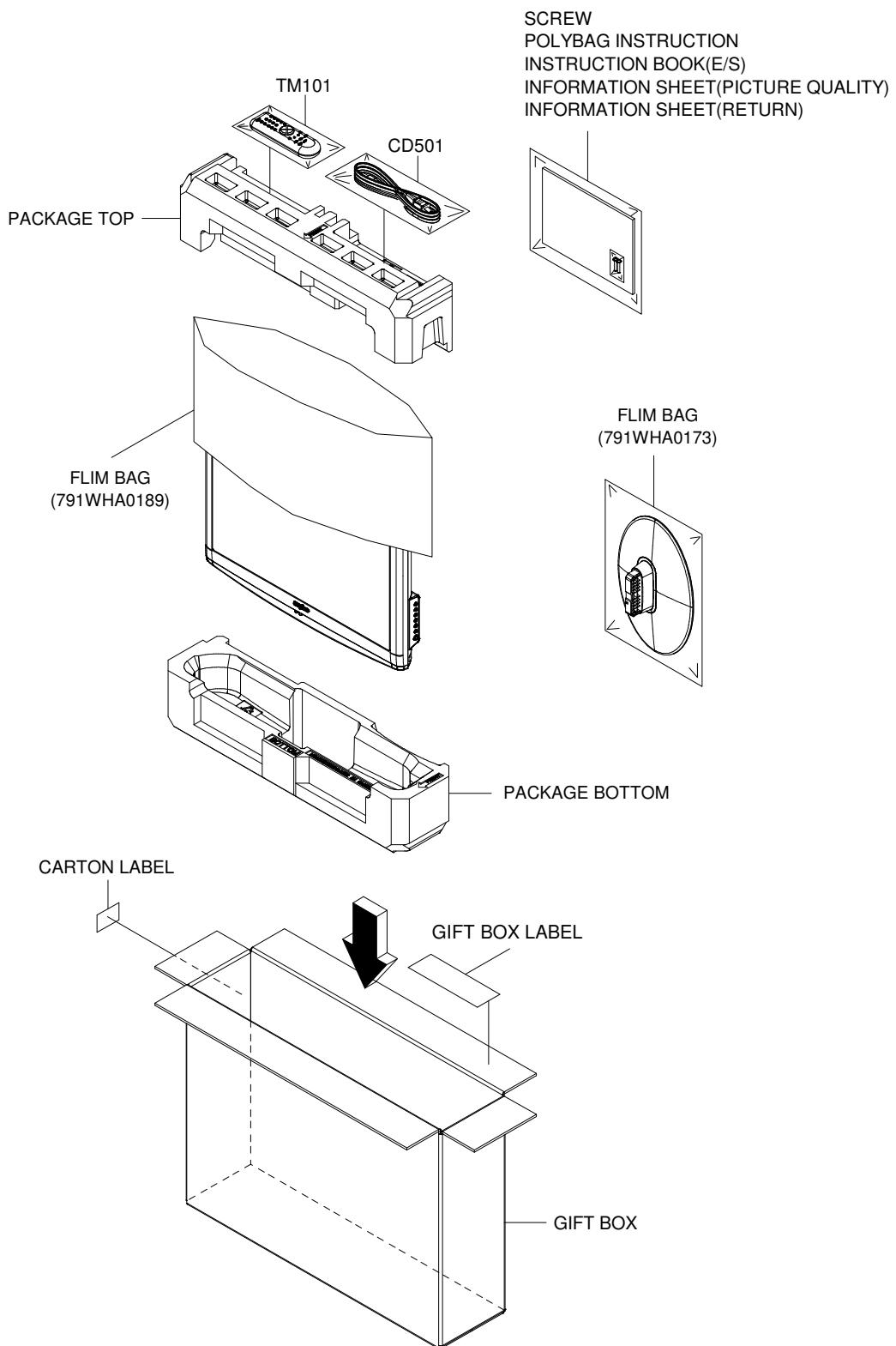


NOTE : The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

MECHANICAL EXPLODED VIEW



MECHANICAL EXPLODED VIEW (PACKING DIAGRAM)



MECHANICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	
101	7A708A372A	FRONT CABI ASS'Y	
101A	708WPA0035	CABINET FRONT	or
	708WPAA092	CANINET FRONT	
101B	713WPA0452	GLASS LED	
101C	800WQ00181	FELT SHEET	
102	7A702B185A	BACK CABI ASS'Y	
102A	702WPAB676	CABINET BACK	
102B	721000A002	SHEET BUTTON	
102C	735WPAB211	STOPPER BUTTON	
102D	735WPA0982	BUTTON FRAME	
102E	761WSA0790	ANGLE BACK	or
	761WSA0791	ANGLE BACK	
103	7A7040108B	STAND ASS'Y	
103A	704WPBA111	STAND	or
	704WPBA110	STAND	or
	704WPBA127	STAND	or
	704WPBA124	STAND	
103B	800WRA0009	CUSHION LEG	
104	7G7520063A	SHIELD DIGITAL ASS'Y	
104A	752WSA0786	SHIELD DIGITAL	
104B	744WUA0060	SPRING EARTH HDMI	
105	723529A003	BADGE BRAND	1AV2BAAS023
106	704WPA0146	FRAME STAND	
107	706WPA0031	COVER CONNECTOR	
108	722529A022	SHEET RATING	
109	761WPA0598	HOLDER SPEAKER	
110	800CR00003	DAMPER SPEAKER	
111	899RFPC25V	HOLDER CORD	
201	8109I30A0U	SCREW TAP TITE(B) WH7	3x10
202	8109230A0U	SCREW TAP TITE(B) BIND	3x10
203	810B13080U	SCREW WASHER(B)	M3X8
204	8171130A0U	SCREW TAP TITE(B) WASHER12	3x10
205	8117140B5U	SCREW TAPPING(B0) PAN	4x25
---	723000E463	GIFT BOX LABEL	
---	723000E632	CARTON LABEL	
---	791WHA0173	FILM BAG	
---	791WHA0189	FILM BAG	
---	792WHAA361	PACKAGE TOP	
---	792WHAA362	PACKAGE BOTTOM	
---	793WCDE383	GIFT BOX	
---	8905000001	SCREW	
---	J37I0529A	INFORMATION SHEET(RETURN)	
---	J3CL1021A	INSTRUCTION BOOK(E/S)	
---	J3CL1059A	INFORMATION SHEET(PICTURE QUALITY)	
---	JA5K0000	POLYBAG INSTRUCTION	

ELECTRICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION		REF. NO.	PART NO.	DESCRIPTION	
RESISTORS				RESISTORS			
R302	R002T4102J	RC	1K OHM 1/4W	R2866	R808R9472J	RC	4.7K OHM 1/16W
R304	R803R9222J	RC	2.2K OHM 1/16W	R2867	R808R9472J	RC	4.7K OHM 1/16W
R305	R803R9222J	RC	2.2K OHM 1/16W	R2868	R808R9103J	RC	10K OHM 1/16W
R306	R803R9222J	RC	2.2K OHM 1/16W	R2871	R808R9472J	RC	4.7K OHM 1/16W
R307	R803R9222J	RC	2.2K OHM 1/16W	R2875	R808R9472J	RC	4.7K OHM 1/16W
R501	R803R9222J	RC	2.2K OHM 1/16W	R2876	R808R9472J	RC	4.7K OHM 1/16W
R502	R803R9473J	RC	47K OHM 1/16W	R2882	R808R9472J	RC	4.7K OHM 1/16W
R504	R002T4103J	RC	10K OHM 1/4W	R2883	R808R9472J	RC	4.7K OHM 1/16W
△ R505	R8X2R8334J	RC	330K OHM 1/8W	R2886	R808R9102J	RC	1K OHM 1/16W
△ R508	R8X2R8334J	RC	330K OHM 1/8W	R2891	R808R9103J	RC	10K OHM 1/16W
△ R510	R3K781R47J	R, METAL OXIDE	0.47 OHM 1W	R2894	R808R9220J	RC	22 OHM 1/16W
R511	R002T4101J	RC	100 OHM 1/4W	R2895	R808R9472J	RC	4.7K OHM 1/16W
△ R512	R3K781563J	R, METAL OXIDE	56K OHM 1W	R2896	R808R9220J	RC	22 OHM 1/16W
△ R514	R3K781R47J	R, METAL OXIDE	0.47 OHM 1W	R2898	R808R9472J	RC	4.7K OHM 1/16W
R515	R803R9102J	RC	1K OHM 1/16W	R2899	R808R9123F	RC	12K OHM 1/16W
R517	R803R9222J	RC	2.2K OHM 1/16W	R2908	R808R9472J	RC	4.7K OHM 1/16W
R518	R002T4101J	RC	100 OHM 1/4W	R2913	R808R9101J	RC	100 OHM 1/16W
R519	R803R9222J	RC	2.2K OHM 1/16W	R2915	R808R9472J	RC	4.7K OHM 1/16W
△ R521	R8X2R8334J	RC	330K OHM 1/8W	R2916	R808R9472J	RC	4.7K OHM 1/16W
R523	R803R9222F	RC	2.2K OHM 1/16W	R2917	R808R9472J	RC	4.7K OHM 1/16W
R524	R803R9911F	RC	910 OHM 1/16W	R2919	R808R9103J	RC	10K OHM 1/16W
R525	R803R9222F	RC	2.2K OHM 1/16W	R2920	R808R9103J	RC	10K OHM 1/16W
R529	R002T4222J	RC	2.2K OHM 1/4W	R3001	R808R9682J	RC	6.8K OHM 1/16W
R531	R803R9103J	RC	10K OHM 1/16W	R3002	R808R9102J	RC	1K OHM 1/16W
R2201	R803R9102J	RC	1K OHM 1/16W	R3004	R808R9100J	RC	10 OHM 1/16W
R2202	R803R9821J	RC	820 OHM 1/16W	R3005	R808R9223J	RC	22K OHM 1/16W
R2203	R803R9153J	RC	15K OHM 1/16W	R3006	R808R9332J	RC	3.3K OHM 1/16W
R2204	R803R9562J	RC	5.6K OHM 1/16W	R3007	R808R9472J	RC	4.7K OHM 1/16W
R2205	R803R9562J	RC	5.6K OHM 1/16W	R3009	R808R9103J	RC	10K OHM 1/16W
R2206	R803R9821J	RC	820 OHM 1/16W	R3012	R808R9682J	RC	6.8K OHM 1/16W
R2803	R808R9103J	RC	10K OHM 1/16W	R3017	R808R9822J	RC	8.2K OHM 1/16W
R2804	R808R9103J	RC	10K OHM 1/16W	R3023	R808R9104J	RC	100K OHM 1/16W
R2805	R808R9103J	RC	10K OHM 1/16W	R3024	R808R9472J	RC	4.7K OHM 1/16W
R2808	R808R9222J	RC	2.2K OHM 1/16W	R3027	R808R9473J	RC	47K OHM 1/16W
R2809	R808R9201F	RC	200 OHM 1/16W	R3030	R808R9183F	RC	18K OHM 1/16W
R2810	R808R9472J	RC	4.7K OHM 1/16W	R3034	R808R9103F	RC	10K OHM 1/16W
R2811	R808R9103J	RC	10K OHM 1/16W	R3037	R808R9332F	RC	3.3K OHM 1/16W
R2812	R808R9472J	RC	4.7K OHM 1/16W	R3038	R803R9272F	RC	2.7K OHM 1/16W
R2813	R808R9102J	RC	1K OHM 1/16W	R3039	R808R9472F	RC	4.7K OHM 1/16W
R2814	R808R9471J	RC	470 OHM 1/16W	R3040	R808R9562F	RC	5.6K OHM 1/16W
R2815	R808R9220J	RC	22 OHM 1/16W	R3044	R808R9912J	RC	9.1K OHM 1/16W
R2816	R808R9220J	RC	22 OHM 1/16W	R3057	R808R9183J	RC	18K OHM 1/16W
R2817	R808R9220J	RC	22 OHM 1/16W	R3058	R808R9102F	RC	1K OHM 1/16W
R2818	R808R9220J	RC	22 OHM 1/16W	R3059	R808R9273F	RC	27K OHM 1/16W
R2819	R808R9220J	RC	22 OHM 1/16W	R3060	R808R9822F	RC	8.2K OHM 1/16W
R2820	R808R9105J	RC	1M OHM 1/16W	R3602	R808R9472J	RC	4.7K OHM 1/16W
R2822	R808R9104J	RC	100K OHM 1/16W	R3603	R808R9103J	RC	10K OHM 1/16W
R2823	R803R9222J	RC	2.2K OHM 1/16W	R3604	R808R9100J	RC	10 OHM 1/16W
R2824	R808R9103J	RC	10K OHM 1/16W	R3605	R808R9103J	RC	10K OHM 1/16W
R2825	R808R9103J	RC	10K OHM 1/16W	R3609	R808R9103J	RC	10K OHM 1/16W
R2827	R808R9123F	RC	12K OHM 1/16W	R3611	R808R9102J	RC	1K OHM 1/16W
R2828	R808R9472J	RC	4.7K OHM 1/16W	R3614	R808R9223J	RC	22K OHM 1/16W
R2829	R808R9101F	RC	100 OHM 1/16W	R3615	R808R9473J	RC	47K OHM 1/16W
R2830	R808R9101F	RC	100 OHM 1/16W	R3617	R808R9473J	RC	47K OHM 1/16W
R2831	R808R9101J	RC	100 OHM 1/16W	R3638	R808R9103J	RC	10K OHM 1/16W
R2836	R808R9103J	RC	10K OHM 1/16W	R3643	R808R9332J	RC	3.3K OHM 1/16W
R2838	R808R9472J	RC	4.7K OHM 1/16W	R3644	R808R9332J	RC	3.3K OHM 1/16W
R2839	R808R9472J	RC	4.7K OHM 1/16W	R3651	R808R9302J	RC	3K OHM 1/16W
R2841	R808R9330J	RC	33 OHM 1/16W	R3652	R808R9752J	RC	7.5K OHM 1/16W
R2842	R808R9150J	RC	15 OHM 1/16W	R3653	R808R9682F	RC	6.8K OHM 1/16W
R2843	R808R9150J	RC	15 OHM 1/16W	R3654	R808R9561F	RC	560 OHM 1/16W
R2844	R808R9620F	RC	62 OHM 1/16W	R3692	R808R9103J	RC	10K OHM 1/16W
R2845	R808R9101F	RC	100 OHM 1/16W	R3694	R808R9103J	RC	10K OHM 1/16W
R2846	R808R9101F	RC	100 OHM 1/16W	R4235	R803R9222J	RC	2.2K OHM 1/16W
R2847	R808R9562F	RC	5.6K OHM 1/16W	R4238	R808R9101J	RC	100 OHM 1/16W
R2848	R808R9103J	RC	10K OHM 1/16W	R4245	R808R9152J	RC	1.5K OHM 1/16W
R2849	R808R9101J	RC	100 OHM 1/16W	R4246	R808R9332J	RC	3.3K OHM 1/16W
R2850	R808R9472J	RC	4.7K OHM 1/16W	R4247	R808R9101J	RC	100 OHM 1/16W
R2852	R808R9681J	RC	680 OHM 1/16W	R4249	R808R9221J	RC	220 OHM 1/16W
R2853	R808R9681J	RC	680 OHM 1/16W	R4250	R808R9101J	RC	100 OHM 1/16W
R2854	R808R9681J	RC	680 OHM 1/16W	R4251	R808R9680J	RC	68 OHM 1/16W
R2855	R808R9681J	RC	680 OHM 1/16W	R4252	R808R9332J	RC	3.3K OHM 1/16W
R2856	R808R9682F	RC	6.8K OHM 1/16W	R4254	R808R9332J	RC	3.3K OHM 1/16W
R2859	R808R9472J	RC	4.7K OHM 1/16W	R4257	R808R9104J	RC	100K OHM 1/16W
R2860	R808R9472J	RC	4.7K OHM 1/16W	R4258	R803R9222J	RC	2.2K OHM 1/16W
R2861	R808R9102J	RC	1K OHM 1/16W	R4261	R808R9750J	RC	75 OHM 1/16W
R2863	R808R9472J	RC	4.7K OHM 1/16W	R4262	R803R9222J	RC	2.2K OHM 1/16W

ELECTRICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION		REF. NO.	PART NO.	DESCRIPTION	
RESISTORS				CAPACITORS			
R4263	R808R9750J	RC	75 OHM 1/16W	C301	CS0PB0N16K	CC	1 UF 10V B
R4265	R808R9750J	RC	75 OHM 1/16W	C303	CS0PB0N16K	CC	1 UF 10V B
R4316	R808R9153J	RC	15K OHM 1/16W	C304	E7ESU2101M	CE	100 UF 16V
R4317	R808R9153J	RC	15K OHM 1/16W	C305	CS0PCH4Q2J	CC	470 PF 50V CH
R4318	R808R9682J	RC	6.8K OHM 1/16W	C306	CS0PCH4Q2J	CC	470 PF 50V CH
R4319	R808R9682J	RC	6.8K OHM 1/16W	C307	E7ESU5100M	CE	10 UF 50V
R4329	R801R7222J	RC	2.2K OHM 1/10W	C309	E8E1T3471M	CE	470 UF 25V
R4330	R801R7222J	RC	2.2K OHM 1/10W	C310	E7EST2471M	CE	470 UF 16V
R4341	R808R9101J	RC	100 OHM 1/16W	C311	E7EST2471M	CE	470 UF 16V
R4342	R808R9101J	RC	100 OHM 1/16W	C323	E7ESU54R7M	CE	4.7 UF 50V
R4343	R808R9101J	RC	100 OHM 1/16W	C501	E7ESU54R7M	CE	4.7 UF 50V
R4347	R808R9101J	RC	100 OHM 1/16W	△ C502	E8EDFC121D	CE	120 UF 200V
R4348	R808R9153J	RC	15K OHM 1/16W	C503	CS0PCH412J	CC	100 PF 50V CH
R4349	R808R9153J	RC	15K OHM 1/16W	△ C504	E9E8F1182D	CE	1800 UF 10V
R4351	R808R9750J	RC	75 OHM 1/16W	C505	CS0PB0413K	CC	0.001 UF 50V B
R4354	R808R9153J	RC	15K OHM 1/16W	△ C506	P4K12D224K	CMPP	0.22 UF 310V
R4355	R808R9153J	RC	15K OHM 1/16W	△ C507	CE39E0M13M	CC	0.001 UF 250V E
R4357	R808R9750J	RC	75 OHM 1/16W	△ C508	P4K12D104K	CMPP	0.1 UF 310V
R4361	R808R9750J	RC	75 OHM 1/16W	C509	CS0PB0415K	CC	0.1 UF 50V B
R4363	R808R9750J	RC	75 OHM 1/16W	C513	C0PLRR7Q2K	CC	470 PF 2KV R
R4366	R801R7222J	RC	2.2K OHM 1/10W	C515	CS0PB0414K	CC	0.01 UF 50V B
R4367	R801R7222J	RC	2.2K OHM 1/10W	C516	E7ESU5470M	CE	47 UF 50V
R4369	R801R7222J	RC	2.2K OHM 1/10W	△ C518	C03VR0S14K	CC	0.01 UF 250V DC R
R4370	R801R7222J	RC	2.2K OHM 1/10W	△ C520	E8E2U54R7D	CE	4.7 UF 50V
R4371	R801R7222J	RC	2.2K OHM 1/10W	C521	CS0PB04N4K	CC	0.039 UF 50V B
R4372	R801R7222J	RC	2.2K OHM 1/10W	△ C522	E8E1T3471M	CE	470 UF 25V
R4373	R808R9682J	RC	6.8K OHM 1/16W	C523	CS0PB0414K	CC	0.01 UF 50V B
R4374	R808R9682J	RC	6.8K OHM 1/16W	△ C524	CE39E0M13M	CC	0.001 UF 250V E
R4375	R808R9682J	RC	6.8K OHM 1/16W	△ C525	E9E8F3102D	CE	1000 UF 25V
R4376	R808R9682J	RC	6.8K OHM 1/16W	△ C528	CE39E0MQ2K	CC	470 PF 250V E
R5802	R808R9153J	RC	15K OHM 1/16W	C530	CS0PB0N16K	CC	1 UF 10V B
R5803	R808R9153J	RC	15K OHM 1/16W	△ C532	C03VR0S14K	CC	0.01 UF 250V DC R
R5806	R808R9101J	RC	100 OHM 1/16W	C2201	CS0PB0414K	CC	0.01 UF 50V B
R5807	R808R9101J	RC	100 OHM 1/16W	C2202	CS0PB0414K	CC	0.01 UF 50V B
R5808	R808R9101J	RC	100 OHM 1/16W	C2203	CS0PB0414K	CC	0.01 UF 50V B
R5809	R808R9101J	RC	100 OHM 1/16W	C2204	CS0PB0414K	CC	0.01 UF 50V B
R5810	R808R9472J	RC	4.7K OHM 1/16W	C2801	CS0UB0N15K	CC	0.1 UF 10V B
R5814	R808R9332J	RC	3.3K OHM 1/16W	C2803	CS0UB0214K	CC	0.01 UF 16V B
R5815	R808R9332J	RC	3.3K OHM 1/16W	C2804	CS0PB0NQ5K	CC	0.47 UF 10V B
R5816	R808R9102J	RC	1K OHM 1/16W	C2805	CS0UB0214K	CC	0.01 UF 16V B
R5824	R808R9102J	RC	1K OHM 1/16W	C2807	CS0UCH4H1J	CC	22 PF 50V CH
R6207	R808R9103J	RC	10K OHM 1/16W	C2808	CS0UCH4K1J	CC	27 PF 50V CH
R6208	R808R9472J	RC	4.7K OHM 1/16W	C2809	CS0UB0413K	CC	0.001 UF 50V B
R6222	R808R9223J	RC	22K OHM 1/16W	C2811	CS0RB0N17K	CC	10 UF 10V B
R6223	R808R9103J	RC	10K OHM 1/16W	C2812	CS0UB0N15K	CC	0.1 UF 10V B
R6252	R808R9103J	RC	10K OHM 1/16W	C2813	CS0UB0N15K	CC	0.1 UF 10V B
R7001	R002T4123J	RC	12K OHM 1/4W	C2814	CS0UB0N15K	CC	0.1 UF 10V B
R7004	R002T4102J	RC	1K OHM 1/4W	C2815	CS0UB0N15K	CC	0.1 UF 10V B
R7006	R803R9393J	RC	39K OHM 1/16W	C2816	CS0UB0N15K	CC	0.1 UF 10V B
R7008	R002T4101J	RC	100 OHM 1/4W	C2817	CS0UB0N15K	CC	0.1 UF 10V B
R7010	R803R9333F	RC	33K OHM 1/16W	C2818	CS0UB0N15K	CC	0.1 UF 10V B
R7011	R803R9153J	RC	15K OHM 1/16W	C2819	CS0UB0N15K	CC	0.1 UF 10V B
R7012	R002T4471J	RC	470 OHM 1/4W	C2820	CS0UB0N15K	CC	0.1 UF 10V B
R7013	R803R9224F	RC	220K OHM 1/16W	C2821	CS0UB0N15K	CC	0.1 UF 10V B
R7014	R803R9105J	RC	1M OHM 1/16W	C2822	CS0UB0N15K	CC	0.1 UF 10V B
R7015	R803R9183J	RC	18K OHM 1/16W	C2823	CS0UB0N15K	CC	0.1 UF 10V B
R7016	R803R9183J	RC	18K OHM 1/16W	C2824	CS0UB0N15K	CC	0.1 UF 10V B
R7018	R002T4473J	RC	47K OHM 1/4W	C2825	CS0UB0N15K	CC	0.1 UF 10V B
R7019	R002T4471J	RC	470 OHM 1/4W	C2826	CS0UB0N15K	CC	0.1 UF 10V B
R7020	R002T4393J	RC	39K OHM 1/4W	C2827	CS0UB0N15K	CC	0.1 UF 10V B
R7021	R803R9224J	RC	220K OHM 1/16W	C2828	CS0UB0N15K	CC	0.1 UF 10V B
R7022	R002T4182J	RC	1.8K OHM 1/4W	C2829	CS0UB0N15K	CC	0.1 UF 10V B
R7023	R803R9220J	RC	22 OHM 1/16W	C2830	CS0UB0N15K	CC	0.1 UF 10V B
R7024	R803R9220J	RC	22 OHM 1/16W	C2831	CS0UB0N15K	CC	0.1 UF 10V B
R7025	R803R9392F	RC	3.9K OHM 1/16W	C2832	CS0UB0N15K	CC	0.1 UF 10V B
R7026	R803R9223F	RC	22K OHM 1/16W	C2833	CS0UB0N15K	CC	0.1 UF 10V B
R7034	R803R9273J	RC	27K OHM 1/16W	C2834	CS0UB0N15K	CC	0.1 UF 10V B
R7035	R803R9273J	RC	27K OHM 1/16W	C2835	CS0UB0N15K	CC	0.1 UF 10V B
R7038	R002T4330J	RC	33 OHM 1/4W	C2836	CS0UB0N15K	CC	0.1 UF 10V B
R7039	R002T4330J	RC	33 OHM 1/4W	C2837	CS0UB0N15K	CC	0.1 UF 10V B
R7045	R803R9223J	RC	22K OHM 1/16W	C2838	CS0UB0N15K	CC	0.1 UF 10V B
R7046	R803R9223J	RC	22K OHM 1/16W	C2839	CS0UB0N15K	CC	0.1 UF 10V B
R7047	R803R9103J	RC	10K OHM 1/16W	C2840	CS0UB0N15K	CC	0.1 UF 10V B
R7602	R803R9470J	RC	47 OHM 1/16W	C2841	E7EPU0331M	CE	330 UF 6.3V
R7603	R803R9391J	RC	390 OHM 1/16W	C2842	CS0UB0N16K	CC	1 UF 10V B
R7604	R803R9391J	RC	390 OHM 1/16W	C2843	CS0UB0N15K	CC	0.1 UF 10V B
R7605	R803R9101J	RC	100 OHM 1/16W	C2844	CS0UB0N15K	CC	0.1 UF 10V B

ELECTRICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION		REF. NO.	PART NO.	DESCRIPTION	
		CAPACITORS				CAPACITORS	
C2845	CS0UB0N15K	CC	0.1 UF 10V B	C2940	CS0UB0N15K	CC	0.1 UF 10V B
C2846	CS0UB0N15K	CC	0.1 UF 10V B	C2944	CS0UB0N15K	CC	0.1 UF 10V B
C2847	CS0UB0N15K	CC	0.1 UF 10V B	C2945	CS0UB0N15K	CC	0.1 UF 10V B
C2848	CS0UB0N16K	CC	1 UF 10V B	C2946	CS0PB0N16K	CC	1 UF 10V B
C2851	E7EPU0331M	CE	330 UF 6.3V	C2948	CS0PB0N16K	CC	1 UF 10V B
C2854	CS0UB0N15K	CC	0.1 UF 10V B	C2950	CS0UB0N15K	CC	0.1 UF 10V B
C2855	CS0RB0N17K	CC	10 UF 10V B	C2951	CS0RB0N17K	CC	10 UF 10V B
C2856	CS0RB0N17K	CC	10 UF 10V B	C2952	CS0PB0N16K	CC	1 UF 10V B
C2857	CS0UB0N15K	CC	0.1 UF 10V B	C2953	CS0UB0N15K	CC	0.1 UF 10V B
C2858	CS0UB0N15K	CC	0.1 UF 10V B	C2954	CS0UB0N15K	CC	0.1 UF 10V B
C2859	CS0UB0N15K	CC	0.1 UF 10V B	C2955	CS0UB0N15K	CC	0.1 UF 10V B
C2860	CS0RB0N17K	CC	10 UF 10V B	C2956	CS0UB0N15K	CC	0.1 UF 10V B
C2861	CS0RB0N17K	CC	10 UF 10V B	C2957	CS0UB0N15K	CC	0.1 UF 10V B
C2862	CS0RB0N17K	CC	10 UF 10V B	C2958	CS0UB0N15K	CC	0.1 UF 10V B
C2863	CS0RB0N17K	CC	10 UF 10V B	C2959	E7EXU2220D	CE	22 UF 16V
C2864	CS0UB0N15K	CC	0.1 UF 10V B	C2960	CS0UB0N15K	CC	0.1 UF 10V B
C2865	CS0UB0N15K	CC	0.1 UF 10V B	C2961	CS0UB0413K	CC	0.001 UF 50V B
C2866	CS0UB0N15K	CC	0.1 UF 10V B	C2962	CS0UB0413K	CC	0.001 UF 50V B
C2867	CS0UB0N15K	CC	0.1 UF 10V B	C2963	CS0UB0N15K	CC	0.1 UF 10V B
C2868	CS0UB0N15K	CC	0.1 UF 10V B	C2964	CS0UB0N15K	CC	0.1 UF 10V B
C2870	CS0UB0N16K	CC	1 UF 10V B	C2966	CS0RB0N17K	CC	10 UF 10V B
C2871	CS0UB0N16K	CC	1 UF 10V B	C2972	CS0PB0N16K	CC	1 UF 10V B
C2872	CS0RB0N17K	CC	10 UF 10V B	C2974	CS0PB0N16K	CC	1 UF 10V B
C2873	CS0UB0N15K	CC	0.1 UF 10V B	C2976	CS0UB0N15K	CC	0.1 UF 10V B
C2874	CS0UB0N15K	CC	0.1 UF 10V B	C2979	CS0UB0N15K	CC	0.1 UF 10V B
C2875	CS0UB0N15K	CC	0.1 UF 10V B	C2980	CS0UB0N15K	CC	0.1 UF 10V B
C2876	CS0UB0N15K	CC	0.1 UF 10V B	C2981	CS0UB0N15K	CC	0.1 UF 10V B
C2877	CS0UB0N15K	CC	0.1 UF 10V B	C2982	CS0UB0N15K	CC	0.1 UF 10V B
C2878	CS0UB0N16K	CC	1 UF 10V B	C3000	CS0UB0NQ4K	CC	0.047 UF 10V B
C2879	CS0UB0N15K	CC	0.1 UF 10V B	C3009	CS0UB0413K	CC	0.001 UF 50V B
C2880	CS0UB0N15K	CC	0.1 UF 10V B	C3013	CS0UB0413K	CC	0.001 UF 50V B
C2881	CS0UB0N15K	CC	0.1 UF 10V B	C3015	CS0RB0N17K	CC	10 UF 10V B
C2882	CS0UB0N15K	CC	0.1 UF 10V B	C3018	CS0RB0N17K	CC	10 UF 10V B
C2883	CS0UB0N15K	CC	0.1 UF 10V B	C3019	CS0RB0N17K	CC	10 UF 10V B
C2884	CS0UB0N15K	CC	0.1 UF 10V B	C3020	CS0PB0PQ6K	CC	4.7 UF 6.3V B
C2885	CS0UB0N15K	CC	0.1 UF 10V B	C3021	CS0RB0N17K	CC	10 UF 10V B
C2887	CS0UB0N15K	CC	0.1 UF 10V B	C3022	CS0RB0206K	CC	4.7 UF 16V B
C2888	CS0UB0N15K	CC	0.1 UF 10V B	C3023	CS0UB0NH5K	CC	0.22 UF 10V B
C2889	CS0UB0N15K	CC	0.1 UF 10V B	C3024	CS0RB0PH7M	CC	22 UF 6.3V B
C2891	CS0UB0N15K	CC	0.1 UF 10V B	C3027	CS0RB0PH7M	CC	22 UF 6.3V B
C2895	CS0UB0N15K	CC	0.1 UF 10V B	C3030	CS0RB0N17K	CC	10 UF 10V B
C2897	CS0UB0N15K	CC	0.1 UF 10V B	C3032	CS0UB0N15K	CC	0.1 UF 10V B
C2898	CS0UB0N16K	CC	1 UF 10V B	C3033	CS0UB03H4K	CC	0.022 UF 25V B
C2899	CS0UB0N16K	CC	1 UF 10V B	C3034	CS0UB0N15K	CC	0.1 UF 10V B
C2902	CS0UB0N16K	CC	1 UF 10V B	C3035	CS0UB0215K	CC	0.1 UF 16V B
C2903	CS0UB0N16K	CC	1 UF 10V B	C3036	CS0UB0413K	CC	0.001 UF 50V B
C2904	CS0UB0N15K	CC	0.1 UF 10V B	C3037	CS0UB0413K	CC	0.001 UF 50V B
C2905	CS0UB0N15K	CC	0.1 UF 10V B	C3039	CS0UB03H4K	CC	0.022 UF 25V B
C2906	CS0UB0N16K	CC	1 UF 10V B	C3041	CS0RB0N17K	CC	10 UF 10V B
C2907	CS0UB0N16K	CC	1 UF 10V B	C3044	CS0PB0N16K	CC	1 UF 10V B
C2908	CS0UB0N16K	CC	1 UF 10V B	C3045	CS0UB04L3K	CC	0.0033UF 50V B
C2909	CS0UB0N15K	CC	0.1 UF 10V B	C3046	CS0RB0N17K	CC	10 UF 10V B
C2911	CS0RB0N17K	CC	10 UF 10V B	C3047	CS0PB04L3K	CC	0.0033UF 50V B
C2912	CS0UB0N15K	CC	0.1 UF 10V B	C3048	CS0UB0215K	CC	0.1 UF 16V B
C2913	CS0UB0N15K	CC	0.1 UF 10V B	C3049	CS0UB0P16K	CC	1 UF 6.3V B
C2914	CS0UB0N15K	CC	0.1 UF 10V B	C3050	CS0RB0PH7M	CC	22 UF 6.3V B
C2915	CS0UB0N16K	CC	1 UF 10V B	C3051	CS0RB0N17K	CC	10 UF 10V B
C2916	CS0UB0N15K	CC	0.1 UF 10V B	C3057	CS0RB0PH7M	CC	22 UF 6.3V B
C2917	CS0RB0N17K	CC	10 UF 10V B	C3059	CS0UB0413K	CC	0.001 UF 50V B
C2918	CS0RB0N17K	CC	10 UF 10V B	C3067	CS0RB0PH7M	CC	22 UF 6.3V B
C2919	CS0UB0N16K	CC	1 UF 10V B	C3601	CS0UB0N15K	CC	0.1 UF 10V B
C2921	CS0UB0N15K	CC	0.1 UF 10V B	C3607	CS0UB0214K	CC	0.01 UF 16V B
C2923	CS0PB0N16K	CC	1 UF 10V B	C3608	CS0UB04H3K	CC	0.0022UF 50V B
C2925	CS0RB0N17K	CC	10 UF 10V B	C3609	CS0UB0N15K	CC	0.1 UF 10V B
C2926	CS0RB0N17K	CC	10 UF 10V B	C3610	CS0PB0PQ6K	CC	4.7 UF 6.3V B
C2927	CS0RB0N17K	CC	10 UF 10V B	C3613	CS0UB03H4K	CC	0.022 UF 25V B
C2928	CS0RB0N17K	CC	10 UF 10V B	C3627	CS0UB0N15K	CC	0.1 UF 10V B
C2929	CS0RB0N17K	CC	10 UF 10V B	C4230	CS0UB0N15K	CC	0.1 UF 10V B
C2930	CS0RB0N17K	CC	10 UF 10V B	C4236	CS0UB0N16K	CC	1 UF 10V B
C2931	CS0UB0N15K	CC	0.1 UF 10V B	C4240	CS0UB0N15K	CC	0.1 UF 10V B
C2932	CS0UB0N15K	CC	0.1 UF 10V B	C4247	CS0UCH412J	CC	100 PF 50V CH
C2933	CS0UB0N15K	CC	0.1 UF 10V B	C4335	CS0UCH412J	CC	100 PF 50V CH
C2934	CS0UB0N15K	CC	0.1 UF 10V B	C4337	CS0UCH412J	CC	100 PF 50V CH
C2935	CS0RB0N17K	CC	10 UF 10V B	C4339	CS0UCH4Q2J	CC	470 PF 50V CH
C2936	CS0UB0N15K	CC	0.1 UF 10V B	C4340	CS0UCH412J	CC	100 PF 50V CH
C2937	CS0UB0N15K	CC	0.1 UF 10V B	C4341	CS0UCH4Q2J	CC	470 PF 50V CH
C2939	CS0UB0N15K	CC	0.1 UF 10V B	C4342	CS0UCH4Q2J	CC	470 PF 50V CH

ELECTRICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION			
CAPACITORS								
C4343	CS0UCH4Q2J	CC 470 PF 50V CH	D7024	DGERMA1110	DIODE SILICON MA111-(TX)			
C4344	CS0UCH4Q2J	CC 470 PF 50V CH	D7601	0021E9Q010	LED LTL-1BEFJ-002A			
C5808	CS0UB0N15K	CC 0.1 UF 10V B	△ IC301	I03SP20520	SOUND AMP 5W 2CH LA42052-E			
C5815	CS0UCH411J	CC 10 PF 50V CH	△ IC501	I2BT067350	VDS=500V RON=0.70HM STR-Y6735			
C5816	CS0UB0414K	CC 0.01 UF 50V B	△ IC502	I1KJ9A431A	VARIABLE SHUNT REGULATOR TAPE KIA431A-AT			
C5818	CS0UB0N15K	CC 0.1 UF 10V B	△ IC505	000220002W	PHOTO COUPLER PS2561AL1-1-V(W)			
C5819	CS0UB0N15K	CC 0.1 UF 10V B	IC2801	I56M069750	SCALER R8J66975BG			
C5822	CS0UB0414K	CC 0.01 UF 50V B	IC2802	IGXM05162	DDR2-800 512M CL=5 H5PS5162FFR-S5C			
C5823	CS0UCH4S1J	CC 56 PF 50V CH	IC2803	S3CL10UE01	MEMORY DATA EEPROM SOIC M32P AT24C32CN-SH-T			
C5827	CS0UCH4Q1J	CC 47 PF 50V CH	IC2804	-----	MEMORY DATA 32MBIT FLASH TSOP8 EN25F32-100HIP(T)			
C5829	CS0PB02L5K	CC 0.33 UF 16V B	△ IC3000	I1ZF9331D0	REGULATOR 3.3V RP131H331D-T1-F			
C5830	CS0UCH411J	CC 10 PF 50V CH	△ IC3004	I1ZF9501D0	REGULATOR 5V RP131H501D-T1-F			
C5832	CS0UB0N15K	CC 0.1 UF 10V B	△ IC3006	ILN982BHO	REGULATOR 3.3V1.2V RT8282BHGP			
C5838	E7EPU0471M	CE 470 UF 6.3V	△ IC3007	ILN982BHO	REGULATOR 3.3V1.2V RT8282BHGP			
C5844	CS0RB0N17K	CC 10 UF 10V B	△ IC3008	ILN990250	REGULATOR 1.8V RT9025-18GSP			
C6210	CS0UB0P14K	CC 0.01 UF 6.3V B	IC6201	IC7J0291C0	RESET IC 2.9 V TYPE CMOS R3111N291C-TR-F			
C6213	CS0PB0N16K	CC 1 UF 10V B	IC7001	I0BF0315B0	INVERTER CONTROL IC STR-H3315B			
C6220	CS0UCH4H1J	CC 22 PF 50V CH	TRANSISTORS					
C7001	CS0PB0315K	CC 0.1 UF 25V B	Q503	TPAAC05002	COMPOUND TRANSISTOR KRA103SRTK			
C7002	CS0PB0NH6K	CC 2.2 UF 10V B	Q504	TNRAC05003	COMPOUND TRANSISTOR RT1N241C-T112-1			
C7003	CS0PB0414K	CC 0.01 UF 50V B	Q505	TAA1504SY	TRANSISTOR SILICON KTA1504S_Y_RTK			
C7004	CS0PB02H5K	CC 0.22 UF 16V B	Q2800	TNAAB05003	COMPOUND TRANSISTOR KRC102SRTK			
C7009	CS0PB0414K	CC 0.01 UF 50V B	Q2805	T8RA030520	TRANSISTOR SILICON 2SC3052-T1			
C7010	CS0PB0315K	CC 0.1 UF 25V B	Q2806	T8RA030520	TRANSISTOR SILICON 2SC3052-T1			
C7011	CS0PB0316K	CC 1 UF 25V B	Q2807	T8RA030520	TRANSISTOR SILICON 2SC3052-T1			
C7012	CS0PCH4K2J	CC 270 PF 50V CH	Q2900	TJ5A104TU0	FET SSM3K104TU(T5L,T)			
C7015	CS0PCH4U2J	CC 680 PF 50V CH	Q3000	TCAA3875SY	TRANSISTOR SILICON KTC3875S_Y_RTK			
C7017	COJTB05H3K	CC 0.0022UF 500V B	Q3003	TNRAB05004	COMPOUND TRANSISTOR RT1N141C-T112-1			
C7018	COJTB05H3K	CC 0.0022UF 500V B	Q3004	TNRAB05004	COMPOUND TRANSISTOR RT1N141C-T112-1			
C7019	CS0PB0315K	CC 0.1 UF 25V B	Q3008	TJ5MC61100	FET TPC6110(TE85L,F,M)			
C7020	CS0PB0414K	CC 0.01 UF 50V B	Q3602	TNRAB05004	COMPOUND TRANSISTOR RT1N141C-T112-1			
C7021	CS0PB0315K	CC 0.1 UF 25V B	Q3607	TJRA12AU10	FET INK0012AU1			
C7022	CS7SB0317K	CC 10 UF 25V B	Q3608	TJRA12AU10	FET INK0012AU1			
C7026	CS7SB0317K	CC 10 UF 25V B	Q3610	TNRAB05004	COMPOUND TRANSISTOR RT1N141C-T112-1			
C7030	C234SLB11J	CC 10 PF 6KV SL	Q3613	TJRA12AU10	FET INK0012AU1			
C7031	CS0PB04E4K	CC 0.015 UF 50V B	Q4204	T8RA030520	TRANSISTOR SILICON 2SC3052-T1			
C7032	CS0PB04E4K	CC 0.015 UF 50V B	Q6203	TPRAC05003	COMPOUND TRANSISTOR RT1P241C-T112-1			
C7033	C234SLB11J	CC 10 PF 6KV SL	Q7001	T8RA030520	TRANSISTOR SILICON 2SC3052-T1			
C7602	E7QU0101M	CE 100 UF 6.3V	Q7002	TCATC31980	TRANSISTOR,SILICON KTC3198-AT(Y,GR)			
DIODES								
D501	D97U08R21B	DIODE,ZENER MTZJ8.2B T-77	△ Q7004	TJ5MC82180	FET TPC8218-H			
D502	DBJUA6R812	DIODE ZENER HZS6.8NB2	COILS & TRANSFORMERS					
D503	D1VT001330	DIODE,SILICON 1SS133T-77	△ L501	029B000190	COIL,LINE FILTER JLB20143			
△ D507	D4JXRM11C0	DIODE SILICON ZRM11C	L504	02167E100K	COIL 10 UH			
△ D508	D4JXRM11C0	DIODE SILICON ZRM11C	L3002	021AMF3R3P	COIL 3.3 UH			
D509	DJBUA36012	DIODE ZENER HZS36NB2	L3008	021AMF6R8P	COIL 6.8 UH			
△ D510	D4JXRM11C0	DIODE SILICON ZRM11C	L3602	02D1000119	COIL CHOKE EXC28CG900U			
△ D511	D4JX001F50	DIODE SILICON 1F5	L3603	02D1000119	COIL CHOKE EXC28CG900U			
△ D512	D4JXARS010	DIODE SILICON SARS01	L5801	0216SDR22J	COIL 0.22 UH			
D513	DJBUA6R812	DIODE ZENER HZS6.8NB2	△ T501	0481291544	TRANSFORMER,SWITCHING 81291544			
△ D514	D28F0PRA60	DIODE RECTIFIER 30PRA60-FC	△ T7001	0481200027	TRANSFORMER,SWITCHING 81200027			
△ D515	D28F31DQ10	DIODE SCHOTTKY 31DQ10-FC	JACKS					
△ D516	D4JX001F50	DIODE SILICON 1F5	△ J501	064Q1A0014	JACK,AC CCT2302-0921FC			
D517	DJBUA15012	DIODE ZENER HZS15NB2	J4206	060K401144	RCA JACK AV-4B-75H			
△ D518	D4JXRM11C0	DIODE SILICON ZRM11C	J4302	060K131027	HEADPHONE JACK CKX-035-349ABZ1			
△ D523	D2AA045CT0	DIODE SCHOTTKY BARRIER MBRF1045CT	J4303	060K431043	RCA JACK AV3-6D-14H			
D2201	DJBUA5R612	DIODE SCHOTTKY BARRIER FCQS10A045	J4304	060K481001	RCA JACK AV3-6B-15H			
D2202	DJBUA5R612	DIODE ZENER HZS5.6NB2	J4305	060K431042	RCA JACK AV2-6D-07H			
D2800	DGERMA1110	DIODE SILICON MA111-(TX)	J4306	060K131027	HEADPHONE JACK CKX-035-349ABZ1			
D3002	D4CRSK34A0	DIODE SCHOTTKY SK34A	or	SW2201	SWITCH,TACT EVQ21505R			
	D2ARMAB340	DIODE SCHOTTKY SMAB34	or	SW2202	SWITCH,TACT EVQ21505R			
D3003	D28RSA0450	DIODE SCHOTTKY EC300SA045-TE12L	or	SW2203	SWITCH,TACT EVQ21505R			
	D4CRSK34A0	DIODE SCHOTTKY SK34A	or	SW2204	SWITCH,TACT EVQ21505R			
	D2ARMAB340	DIODE SCHOTTKY SMAB34	or	SW2205	SWITCH,TACT EVQ21505R			
	D28RSA0450	DIODE SCHOTTKY EC300SA045-TE12L	or	SW2206	SWITCH,TACT EVQ21505R			
D3604	D61R0V8001	DIODE VARISTA EZJJZ0V80010	SW2207	0504101T34	SWITCH,TACT EVQ21505R			
D3605	D61R0V8001	DIODE VARISTA EZJJZ0V80010	SWITCHES					
D6206	DGERMA1110	DIODE SILICON MA111-(TX)	PCB240	A3CL10U240	POWER PCB ASS'Y CEJ535C			
D7003	DJBUA10012	DIODE ZENER HZS10NB2	PCBDA0	A3CL10UDA0	REMOCON PCB ASS'Y CEJ536C			
D7004	D1VT001330	DIODE,SILICON 1SS133T-77	PCBF40	A3CL10UF40	MAIN PCB ASS'Y CMK178A			
D7012	D1VT001330	DIODE,SILICON 1SS133T-77	P.C.BOARD ASSEMBLIES					
D7013	DGERMA1110	DIODE SILICON MA111-(TX)	B2801	024HC52213	CORE,BEADS FCM1608KF-221T05			
D7014	DGERMA1110	DIODE SILICON MA111-(TX)	B2805	024HC51816	CORE,BEADS HCB1608KF-181T20			
D7017	D1VT001330	DIODE,SILICON 1SS133T-77	B2808	024HC52216	CORE,BEADS HCB1608KF-221T20			
D7018	D1VT001330	DIODE,SILICON 1SS133T-77	B2812	024HC51216	CORE,BEADS HCB1608KF-121T20			
D7023	DGERMA1110	DIODE SILICON MA111-(TX)	B2813	024HC51216	CORE,BEADS HCB1608KF-121T20			
MISCELLANEOUS								

ELECTRICAL REPLACEMENT PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	
MISCELLANEOUS			
B2814	024HC51216	CORE,BEADS	HCB1608KF-121T20
B2818	024HC52216	CORE,BEADS	HCB1608KF-221T20
B3000	024HC51816	CORE,BEADS	HCB1608KF-181T20
B3004	024HC52216	CORE,BEADS	HCB1608KF-221T20
B3006	024HC51816	CORE,BEADS	HCB1608KF-181T20
B3016	024HC51816	CORE,BEADS	HCB1608KF-181T20
B4215	024HC56005	CORE,BEADS	FCM1608CF-600T06
B5801	024HC52216	CORE,BEADS	HCB1608KF-221T20
B5803	024HC52216	CORE,BEADS	HCB1608KF-221T20
B6204	024HC51023	CORE,BEADS	FCM1608KF-102T02
B6205	024HC51023	CORE,BEADS	FCM1608KF-102T02
△CD501	120Q118901	CORD SET AC	LT01-001
CP501	069E7N0630	CONNECTOR PCB SIDE	00_6216_023_000_808+
CD2801	06EH2U2002	CORD CONNECTOR	EH2U2002
CD3001	122HON0401	CORD JUMPER	2H0N0401
CD7601	06CP250901	CORD CONNECTOR	CP250901
CP2801	06GG270029	CONNECTOR PCB SIDE	A2001WV-7A
CP2802	06GG2B0029	CONNECTOR PCB SIDE	A2001WV-11A
CP2803	06GSAA1008	CONNECTOR PCB SIDE	C-001-1-4K121400
CP2804	06GG2U0051	CONNECTOR PCB SIDE	A2006WV30
CP3001	069E7N0630	CONNECTOR PCB SIDE	00_6216_023_000_808+
CP3601	06GSYJ3098	CONNECTOR PCB SIDE	C-HDM-6-KK223110
CP4203	06G7S21501	CONNECTOR PCB SIDE	WD-00021-R
CP4301	069S140419	CONNECTOR PCB SIDE	A2502WV2-4P
CP6204	06GG250029	CONNECTOR PCB SIDE	A2001WV-5A
CP7001	06GJJ20010	CONNECTOR PCB SIDE	C3502(BHDS-2AW)
CP7002	06GJJ20010	CONNECTOR PCB SIDE	C3502(BHDS-2AW)
EL2401	124116281A	EYE LET	XRY16X28BD
EL2402	124120301A	EYE LET	XRY20X30BD
△F501	0805T04001	FUSE	SCT 4A
NR2801	110P4330M5	R,NETWORK	4D02WGJ0330TCE
NR2802	110P4330M5	R,NETWORK	4D02WGJ0330TCE
NR2803	110P4330M5	R,NETWORK	4D02WGJ0330TCE
NR2804	110P4000M5	R,NETWORK	4D02WGJ0000TCE
NR2805	110P4000M5	R,NETWORK	4D02WGJ0000TCE
NR2812	110P4000M5	R,NETWORK	4D02WGJ0000TCE
NR2814	110P4330M5	R,NETWORK	4D02WGJ0330TCE
NR2815	110P4330M5	R,NETWORK	4D02WGJ0330TCE
OS7601	077Q038009	REMOTE RECEIVER	KSM-2003TCW2P
SH502	126D000045	TERMINAL PIN	YQ-12
SH503	126D000045	TERMINAL PIN	YQ-12
SH504	126D000045	TERMINAL PIN	YQ-12
SH505	126D000045	TERMINAL PIN	YQ-12
△SP301	070Y433008	SPEAKER	S0308F11-A
SH3003	126D000045	TERMINAL PIN	YQ-12
△TH501	DSVD8E4R7M	THERMISTOR	B57153S0479A001
TM101	076E0RU011	TRANSMITTER	CRB07G00
△TU5801	0164300032	DIGITAL TUNER	115UCA30AR--F
△V2801	A3CL10U360	LCD MODULE ASS'Y	CLAA185WA03 OR2
X2801	100GT02509	CRYSTAL	SMD-49 C25000H025

RESISTOR

RC.....CARBON RESISTOR

CAPACITORS

CC.....	CERAMIC CAPACITOR
CE.....	ALUMI ELECTROLYTIC CAPACITOR
CP.....	POLYESTER CAPACITOR
CPP.....	POLYPROPYLENE CAPACITOR
CPL.....	PLASTIC CAPACITOR
CMP.....	METAL POLYESTER CAPACITOR
CMPL.....	METAL PLASTIC CAPACITOR
CMPP.....	METAL POLYPROPYLENE CAPACITOR

SPEC.NO.	M3CL-10U
O/R NO.	K073121